TechNotes

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- **dBASE III PLUS on the Starlan Network**
- **Dual Column Formatting in Framework II**
- **Trapping Key Presses in dBASE III PLUS**
- **Using the HP LaserJet with MultiMate Advantage**

ASHTON-TATE

TechNotes

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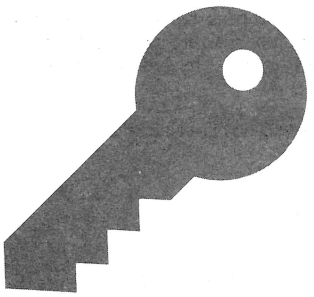
READ ME FIRST



BY BRENDA JOHNSON-GRAU

April brings with it a new member to the TechNotes staff: Kenneth N. Getz. You'll remember Ken as our tireless assembly language programmer in recent months. We are pleased to say that he has joined the staff as Technical Editor.

Now for the contents of April:

Now that dBASE III PLUS has been certified on the Starlan Network, we provide "dBASE III PLUS Installation and Operations on the Starlan Network," by Gail Kulikowsky, Rick Trutna, and Karen Robinson.

"Replacing INKEY() with INKEY.BIN," by Kenneth N. Getz and Karen Robinson, provides an assembly language program to trap key presses in dBASE III PLUS (specifically, **Leftarrow**).

"Dual Column Macro," by Kent Irwin and Karen Robinson, is designed for readers who need to print in two-column format in Framework II.

"Using the HP LaserJet with MultiMate Advantage," by Sue Rapport, Meryl Horowitz, and Liz Burke, shows MultiMate Advantage users how to access the font capabilities of the LaserJet. It includes a helpful table showing the different fonts available with the LaserJet cartridges.

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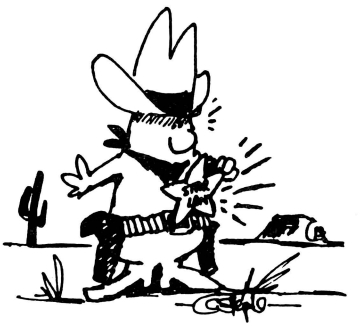


dBASE III PLUS Installation and Operations on the Starlan Network

BY GAIL KULIKOWSKY, RICK TRUTNA,
AND KAREN ROBINSON

Networks enhance productivity by enabling users to share files, printers, and other computer resources. In addition to supporting the 3COM 3+, PC-NET, and Novell Advanced Netware networks, the Ashton-Tate Product Test department recently certified dBASE III PLUS to run on the AT&T Starlan Network, version 1.0. Software developed for PC/MS-DOS 3.1, as well as applications written to use the NETBIOS interface of the IBM PC Network (which is supported on IBM's Token Ring Network), can be run on the AT&T Starlan Network.

In this article we provide instructions for installing, starting, and uninstalling dBASE III PLUS versions 1.0 and 1.1 on the AT&T Starlan Network. The article is divided into three main sections: system requirements, dBASE III PLUS version 1.0, and dBASE III PLUS version 1.1. The system requirements for versions 1.0 and 1.1 are the same, so please read that section regardless of the version you have. The installation procedures, however, are different for each version of dBASE III PLUS. Version 1.0 is copy-protected and requires each workstation to have a copy-protected disk or an installed copy-protected dBASE III PLUS. Version 1.1 is not copy protected and the scheme to verify legitimate users is different. New users are added through a program called ADDUSER.COM as opposed to loading from separate Access disks. During the dBASE III PLUS version 1.1 installation, a subdirectory called DBNETCTL.300 is created and contains files to keep track of the number of users logged on to dBASE III PLUS. For instructions on installing, starting, and uninstalling dBASE III PLUS on your system, read the section appropriate for your version.

These instructions assume that you have installed the Starlan Network and the network program on each computer on the network. Refer to *Starlan Network User's and DOS Server Guide* for requirements and instructions on setting up workstations and file server computers.

Special Symbols

This article uses special symbols for some commands:

[<d:\path\>]	Anything between brackets is optional. This bracketed item signals you to enter the drive letter and the directory path before a filename that is not in the current directory. Don't type the brackets.
<filename>	Angle brackets surround variable information. This notation lets you know where to enter the name of a file in the command line. Again, don't type the brackets.
\\servername\	You substitute the name of your file server for servername, also typing the \\ and \ backslash symbols.

System Requirements

To install dBASE III PLUS, version 1.0 or version 1.1, on the AT&T Starlan Network, you must have a file server and at least one client workstation. You can use AT&T PC 6300, AT&T PC 6300 PLUS, or other 100% IBM PC compatibles.

File Server Requirements

The file server must meet the following system requirements:

1. Run in dedicated mode. After the AT&T Starlan Network is loaded, there is not enough free memory to run dBASE Administrator from a non-dedicated server.
2. Have approximately 660K of hard disk storage for the dBASE Administrator files.
3. Have a minimum of 640K RAM.
4. Run under PC/MS-DOS 3.1.
5. The CONFIG.SYS file on the file server hard disk must include the following command lines:

```
FILES = 51
BUFFERS = 17
```

Client Workstation Requirements

The workstation must meet these system requirements:

1. Have at least one floppy drive.
2. Run under PC/MS-DOS 3.1.
3. Have a minimum of 384K RAM. At least 256K must be available RAM; however, 384K of available RAM is recommended.

   For information regarding the limitations of a 256K environment, refer to "Operating dBASE III PLUS in a 256K Environment" by Gail Kulikowsky in the April 1986 issue of ***TechNotes***.
4. The CONFIG.SYS file on the workstation must include these command lines:

   ```
   FILES = 20
   BUFFERS = 15
   ```

dBASE III PLUS Version 1.0

Installing dBASE III PLUS Administrator version 1.0

Installing the dBASE Administrator version 1.0 on a file server requires creating a shared directory for the dBASE Administrator files, installing the dBASE Administrator files into that shared directory, and setting the file privileges for the dBASE Administrator files to read-only.

The steps below demonstrate how to install the dBASE III PLUS Administrator version 1.0 on the file server (in a directory called DBASE) and set up a directory (DBFILES) for shared data files. dBASE Administrator must be installed onto the file server before dBASE ACCESS is installed to any workstation. Before proceeding, locate the disks labeled Administrator Disk #1, Administrator Disk #2, and System Disk #1.

Creating a Shared dBASE Administrator Directory

These instructions assist you in creating a directory called \APPS\DBASE on the file server's hard disk. They assume that you are at a workstation with the network program loaded.

1. Login as the network administrator, ADMIN:

   ```
   C> AD LOGIN \\servername\ADMIN
   ```
2. If you have not already created a directory for multiuser application programs on your file server's hard disk, create the APPS directory with the share name APPS:

   ```
   C> FS ASHARE APPS = C:\APPS
   ```
3. Next, create a subdirectory on the file server's hard disk, APPS\DBASE, with the share name DBASE:

   ```
   C> FS ASHARE DBASE = C:\APPS\DBASE
   ```

Installing the dBASE Administrator

The following steps install the dBASE Administrator program files to the directory C:\APPS\DBASE on the network file server. Before proceeding, be sure you have the dBASE III PLUS System Disk #1 and the Administrator #1 and Administrator #2 disks.

1. Still logged in as the administrator user ADMIN, link a logical or virtual drive, E:, to the dBASE directory sharename. This allows you to change your current directory on the file server's hard disk to the DBASE subdirectory:

   C> FS LINK E: DBASE

2. To install dBASE III PLUS on the network, insert System Disk #1 into drive A: and from the A> prompt enter:

   A> INSTALL E: DBA
   ↑ This is a required space.

   The screen displays hard disk installation information. Follow these prompts to complete the installation. During the installation, the program will copy files from the Administrator #1 and Administrator #2 disks. If the installation is interrupted by an error message, check the *Getting Started* booklet or the Starlan Network documentation for the recommended corrective action.

3. To change the dBASE Administrator file attributes to read-only, insert your DOS disk into drive A: and enter:

   C> A:ATTRIB +R E:*.*

   If you are using AT&T PC 6300 MS-DOS, use the CHMOD command instead of the ATTRIB command:

   C> A:CHMOD E:*.* +R

dBASE Administrator is now installed. The following files are now in the DBASE directory:

DBA.EXE
DBA.LD1
DBA.OVL
DBASE.MSG
HELP.DBS
ASSIST.HLP
PROTECT.EXE

After dBASE Administrator is installed, you can enable users to use dBASE III PLUS by installing the ACCESS program to each workstation.

Creating Shared Database and Program File Directories

Still logged in as the network administrator, create any other shared directories that you want on your file server. For example, to create a shared directory, DBFILES, on the file server, type:

C> FS ASHARE DBFILES = C:\DBFILES

When you want to access files in the DBFILES directory, link a virtual drive to this directory.

Installing dBASE Access

Each dBASE Access disk enables one user to log onto and use dBASE III PLUS on the network. You can also use System Disk #1 to install one copy of Access to a workstation.

You can install dBASE Access to a client workstation using one of two approaches:

1. Install dBASE Access to the workstation hard disk.
2. Install dBASE Access on System Disk #1 and use System Disk #1 as a key disk whenever loading dBASE Administrator.

Installing dBASE Access on a Workstation Hard Disk

To install dBASE Access to a workstation hard disk, complete these steps:

1. Logon to the hard disk and create a subdirectory for the dBASE Access files by entering,

   C> MKDIR ACCESS

2. Logon to the ACCESS subdirectory by typing,

   C> CD \ACCESS

3. To begin the installation process, insert the dBASE III PLUS System Disk #1 into drive A: and from the A> prompt, type

   A> INSTALL [<drive:>] ACCESS
   ↑—This is a required space.

   where [drive:] is the drive letter for the hard disk.

4. Follow the instructions displayed on your screen to complete the installation.
5. Unlink from virtual drive E: by typing,

   C> FS UNLINK E:

6. Logout as the Starlan Administrator by entering,

   C> AD LOGOUT

7. Remove System Disk #1 from drive A:.

dBASE Access is installed on the workstation hard disk. Now you can load and use dBASE III PLUS in the Starlan Network environment.

Installing dBASE Access on System Disk #1

To install dBASE Access on System Disk #1, follow these steps:

1. Insert System Disk #1 into drive A: and from the A> prompt, type

   A> INSTALL A: Access
   ↑—This is a required space.

2. Follow the instructions displayed on your screen to complete the installation.
3. Logon to drive C: and unlink from virtual drive E: by typing,

   C> FS UNLINK E:

4. Logout as the Starlan Administrator by typing,

   C> AD LOGOUT

5. Remove System Disk #1 from drive A:.

At this point, dBASE Administrator is installed on the file server and dBASE Access is installed on System Disk #1 . Now you can load and use dBASE III PLUS in the Starlan Network environment.

Starting dBASE Administrator

You can run dBASE Administrator from a workstation by first linking a virtual drive to the dBASE Administrator directory (DBASE), and then entering the ACCESS command.

1. Logon to the workstation using the user name you've been assigned by your network administrator:

   C> AD LOGIN \\servername\username

   Substitute both the server name and the user name you are using in this command.

2. Link virtual drives to the dBASE Administrator directory and to any other directories on the file server that you intend to use. For example,

   C> FS LINK E: DBASE
   C> FS LINK F: DBFILES

   You can set up linked drives in a DOS search path. The easiest way to do this is to add the linked drives to the DOS PATH command. For example, to add drives E: and F:, the DOS PATH command is set to contain the following:

   PATH = E:\;F:\;C:\ATTUSR;...

3. dBASE Administrator is loaded in one of two ways depending on where dBASE ACCESS was installed.

   - To load dBASE Administrator from a workstation hard disk, enter

     [<drive:>]\ACCESS\ACCESS M = E:

     where [<drive>] is the drive letter of the workstation hard disk and assuming you linked drive E to the dBASE Administrator directory (DBASE).

   - To load dBASE Administrator on a floppy system, insert System Disk #1 into drive A and from the A> prompt type,

     ACCESS M = E:

   assuming you linked drive E to the dBASE Administrator directory (DBASE).

   To automatically link the necessary drives and load dBASE Administrator, place these commands in a batch file.

Uninstalling dBASE Administrator

Use the Uninstal program, located on System Disk #1, to uninstall the dBASE Administrator. The Uninstal program deletes all dBASE Administrator program files but does not delete data files or the DBSYSTEM.DB file set up by the PROTECT command to define file access privileges.

Before uninstalling dBASE Administrator from your shared hard disk, be sure that no other users are using dBASE III PLUS. Use the DISPLAY USERS command to check whether there are any active dBASE users on the network.

Here's how to uninstall dBASE Administrator:

1. Login as the network administrator ADMIN. Then change the file attributes of the dBASE Administrator files to read-write by inserting your DOS disk into drive A and entering:

   C> A:ATTRIB -R E:*.*

   If you are using AT&T PC 6300 MS-DOS, use the CHMOD command instead of the ATTRIB command:

   C> A:CHMOD E:*.* -R

2. Insert System Disk #1 in drive A: and from the A> prompt enter,

   A> UNINSTAL E: DBA
   ↑ This is a required space.

3. Follow the prompts that appear on the screen. When you are finished, a message indicates a successful uninstall procedure.

Uninstalling dBASE Access

dBASE Access is uninstalled from a workstation. The uninstall procedure depends on whether dBASE Access was installed to System Disk #1 or to a workstation hard disk. Both procedures are listed below.

Uninstalling dBASE Access from a Workstation Hard Disk

To uninstall dBASE Access from a workstation hard disk, complete these steps:

1. From the workstation hard disk, make the Access subdirectory the default directory by typing,

   C> CD \ACCESS

2. To begin uninstallation, insert the dBASE III PLUS System Disk #1 into drive A: and from the A> prompt, enter

   A> UNINSTAL [<drive:>] ACCESS
   ↑ This is a required space.

   where [<drive:>] is the drive letter for the workstation hard disk.

3. Follow the instructions displayed on your screen to complete the uninstallation.

4. To unlink from virtual drive E:, type

   C> FS UNLINK E:

dBASE Access is now uninstalled from the local hard disk.

Uninstalling dBASE Access from System Disk #1

To uninstall dBASE Access from System Disk #1, complete these steps:

1. To start the uninstallation procedure, insert System Disk #1 into drive A: and from the A> prompt enter,

   A> UNINSTAL A: ACCESS
   ↑ This is a required space.

2. Logon to drive C: and unlink from virtual drive E: by typing,

   C> FS UNLINK E:

3. Remove System Disk #1 from the A: drive.

dBASE ACCESS is now uninstalled from System Disk #1.

dBASE III PLUS Version 1.1

Installing dBASE III PLUS Administrator version 1.1

Before you can install or use the dBASE Administrator version 1.1 for the first time, you need to run the IDLAN program on Administrator disk #1 to add your company's name and the dBASE III PLUS serial number to the copyright screen. Once you have added this information to the copyright screen, it cannot be changed.

Running the IDLAN Program

To run the IDLAN program insert the Administrator #1 disk in drive A: and from the A> prompt enter:

A> IDLAN

Then follow the prompts that appear on the screen to enter your company name and the dBASE III PLUS serial number. Enter the serial number printed on the System Disk #1 label.

Installing dBASE Administrator on a file server requires creating a shared directory for dBASE Administrator files, installing the dBASE Administrator files to the shared directory, and setting the file privileges for the dBASE Administrator files to read-only.

These instructions step you through installing the dBASE III PLUS Administrator to the file server (in a shared directory called DBASE), setting up a directory (DBFILES) for shared data files, and if you have a LAN PACK, running the Adduser program to enable additional users to run dBASE III PLUS on the network. Before proceeding, locate the disks labeled Administrator Disk #1, Administrator Disk #2, and System Disk #1.

Creating a Shared dBASE Administrator Directory

These instructions assist you in creating a directory called DBASE on the file server's hard disk. The instructions assume that you are at a workstation and that the network program is installed.

1. Login as the network administrator, ADMIN:

   C> AD LOGIN \\servername\ADMIN

2. If you have not already created a directory for multiuser application programs on your file server's hard disk, create the APPS directory with the sharename APPS:

   C> FS ASHARE APPS = C:\APPS

3. Next, create a subdirectory on the file server's hard disk, APPS\DBASE, with the sharename DBASE:

   C> FS ASHARE DBASE = C:\APPS\DBASE

Installing dBASE Administrator

The following steps install the dBASE Administrator program files to the directory C:\APPS\DBASE on the network file server. Before proceeding, be sure you have System Disk #1 and the Administrator #1 and Administrator #2 disks.

1. Still logged in as the administrator user ADMIN, link a logical or virtual drive E: to the dBASE directory share name. This allows you to change your current directory on the file server's hard disk to the DBASE subdirectory:

   C> FS LINK E: DBASE

2. To install dBASE III PLUS on the network, insert System Disk #1 into drive A: and from the A> prompt enter:

   A> INSTALL E: DBA

   There must be a space here.

   The screen displays hard disk installation information. Follow the prompts to complete the installation. During the installation, the program will copy files from the Administrator #1 and Administrator #2 disks. If the installation is interrupted by an error message, check the *Getting Started* booklet or the Starlan Network documentation for the recommended corrective action. Once the installation is complete, Administrator #2 is in drive A: and the A> drive is the default.

3. To change the dBASE Administrator file attributes to read-only, insert your DOS system disk into drive A: and, from the C> prompt, enter:

   C> A:ATTRIB +R E:*.*

   If you are using AT&T PC 6300 MS-DOS, use the CHMOD command instead of the ATTRIB command:

   C> A:CHMOD E:*.* +R

4. Unlink drive E: from the shared dBASE Administrator directory:

   C> FS UNLINK E:

dBASE Administrator is now installed. The following files are now in the APPS\DBASE directory:

DBA.COM
DBA.OVL
DBASE.MSG
HELP.DBS
ASSIST.HLP
PROTECT.EXE
ADDUSER.COM

A subdirectory named DBNETCTL.300 is created in the APPS\DBASE directory during the installation. This directory is used by ADDUSER to keep track of the number of workstations that can run dBASE III PLUS on the network at any given time. Do not delete this directory or change any of its contents.

After the dBASE Administrator installation, one user is automatically enabled to run dBASE III PLUS. To add more users, you need to run ADDUSER (located in the dBASE Administrator directory).

Creating Shared Database and Program File Directories

Still logged in as the network administrator, create any other shared directories that you want on your file server. For example, to create a shared directory, DBFILES, on the file server, type:

```
C> FS ASHARE DBFILES = C:\DBFILES
```

When you want to access files in the DBFILES directory, link a virtual drive to this directory.

Running ADDUSER.COM

Adding Users

As stated earlier, installing dBASE Administrator automatically enables one user to run dBASE Administrator. The Adduser program allows you to enable workstations to run dBASE III PLUS on the network. You can add five users from each dBASE Access disk (from version 1.1 dBASE III PLUS LAN Pack). You can also use System Disk #1 or dBASE Access disks from previous versions of dBASE III PLUS to add one user from each of these disks.

ADDUSER.COM offers four options: Add users, Subtract users, Display user count, and Exit. To add users, follow these steps:

1. Make sure you are in the directory that contains the dBASE Administrator program files. If you changed directories earlier, change back to the dBASE Administrator directory now.
2. Enter,

   ```
   E> ADDUSER
   ```

   The dBASE Administrator Access Control Program screen appears.

3. You are prompted to enter the drive letter where the Adduser control files in the DBNETCTL.300 subdirectory are located. Since DBNETCTL.300 is created as a subdirectory of the dBASE Administrator directory, referenced by the virtual drive E:, enter,

   E:

4. Select 1 to choose the "Add users" option. Follow the prompts that appear on the screen. To add users, insert your System Disk #1 or a dBASE ACCESS disk in your floppy disk drive. When the "Add users" option is completed, the Access Control Program screen reappears.

5. Select 3 to choose the "Display user count" option. This option lets you check that you've added users. Follow the prompts on the screen to complete the procedure.

6. Repeat step 4 to add additional users. Remember that you must use a System Disk #1, which has not been used previously to add a user, or use a dBASE ACCESS disk from the dBASE III PLUS LAN Pack.

7. Select 4 to exit the Adduser program.

8. Note the file server name on each Access Disk you used to add a user so that you have a record of which disks are installed to which server.

If you ever want to decrease the number of users who can access dBASE Administrator, you'll need to use one of the disks you originally used to add a user. One user count can be added back to each System Disk #1 and five user counts can be restored to each version 1.1 dBASE Access disk. However, you cannot reduce the user count to zero without uninstalling. For more details on how to decrease the number of users able to access dBASE Administrator, see the Subtracting Users section below.

Subtracting Users

If you want to reduce the number of users able to run dBASE Administrator, you can run ADDUSER and select the "Subtract users" option. To subtract users, you must use a disk previously used to add users this network (either System Disk #1 or a dBASE Access disk).

1. Change your current drive to the one containing the dBASE Administrator files.

2. Enter,

   E> ADDUSER

   The dBASE Administrator Access Control Program screen appears.

3. Enter the drive letter where the Adduser control files are located (the location of DBNETCTL.300). If the DBNETCTL.300 directory is referenced by the logical drive E:, enter

   E:

4. Select 2 to choose the "Subtract users" option. Follow the prompts that appear on the screen. When the "Subtract users" option is completed, the Access Control Program screen reappears.
5. Select 3 to choose the "Display user count" option. This option lets you check that you've subtracted users. Follow the prompts on the screen to complete the procedure.
6. Repeat step 4 to subtract additional users. Remember that you must use a separate floppy disk (one that you previously used to add a user) to subtract additional users.
7. Select 4 to exit the Adduser program.

Starting dBASE Administrator

You can run dBASE Administrator from a workstation by first linking a virtual drive to the dBASE Administrator directory (APPS\DBASE) and then entering the DBA command.

The first time you run dBASE III PLUS on a network, the file named LOGIN.DB is created in the current directory. LOGIN.DB keeps track of the number of users using dBASE III PLUS on the network. Do not change the file privileges for the LOGIN.DB file to read-only.

1. Logon to the workstation using the user name you've been assigned by your network administrator:

   ```
   C> AD LOGIN \\servername\username
   ```

   Substitute both the server name and the user name you are using in this command.

2. Link virtual drives to the dBASE Administrator directory and to any other directories on the file server that you intend to use. For example,

   ```
   C> FS LINK E: DBASE
   C> FS LINK F: DBFILES
   ```

   You can set up linked drives in a DOS search path. The easiest way to do this is to add the linked drives to the DOS PATH command. For example, to add drives E: and F:, the DOS PATH command would be set to contain the following:

   ```
   PATH =E:\;F:\;C:\ATTUSR...
   ```

3. Change your default drive and directory to the location from which you want to run dBASE Administrator.
4. To start dBASE Administrator, type the following:

   ```
   DBA #DF=E:
       ↑
       └── There must be a space here.
   ```

   Following the #DF=, you specify the drive where dBASE Administrator files are located. This is drive E: if you linked drive E: to the dBASE Administrator directory (APPS\DBASE).

Once you've entered the DBA command, the dBASE Administrator copyright notice appears. The copyright screen includes the information you entered using the IDLAN program.

Uninstalling dBASE Administrator

Use the Uninstal program, located on System Disk #1, to uninstall the dBASE Administrator. The Uninstal program deletes all dBASE Administrator program files but doesn't delete data files or the DBSYSTEM.DB file set up by the PROTECT command to define file access privileges.

Before uninstalling dBASE Administrator from your shared hard disk, be sure that no other users are using dBASE III PLUS. Use the DISPLAY USERS command to check whether there are any active dBASE users on the network.

Here's how to uninstall dBASE Administrator:

1. Logon as the network administrator ADMIN and link to drive E:. To change the file attributes of the dBASE Administrator files to read-write, insert your DOS disk into drive A: and enter:

   C> A:ATTRIB -R E:*.*

   If you are using AT&T PC 6300 MS-DOS, use the CHMOD command instead of the ATTRIB command:

   C> A:CHMOD E:*.* -R

2. Insert System Disk #1 in drive A: and from the A> prompt, enter,

   A> UNINSTAL E: DBA
   ↑ This is a required space.

3. Follow the prompts that appear on the screen. When you've finished, a message indicates a successful uninstall procedure.

Use this article as a reference guide when installing, starting, and uninstalling dBASE III PLUS version 1.0 or version 1.1 on the Starlan Network. Because the installation procedures are different for version 1.0 and version 1.1, read only the sections appropriate to your version of dBASE III PLUS.

For an overview of how to use dBASE III PLUS on a network, read *Welcome to Networking With dBASE III PLUS* and chapter 1 of *Networking With dBASE III PLUS*.

Replacing INKEY() with Inkey.BIN

BY KENNETH N. GETZ AND
KAREN ROBINSON

In dBASE III PLUS version 1.1, the INKEY() function does not trap **Leftarrow**. For this reason, Inkey.BIN was written to replace INKEY() in those instances where you want to trap the **Leftarrow** key. Inkey.BIN is an assembly language routine that checks the keyboard buffer to see if a key is pressed. If so, it reads the key from the buffer and translates it to a code you can use as you would the code returned by INKEY(). There are, however, some differences between Inkey.BIN and INKEY(). The following list summarizes the similarities and the differences.

1. Inkey.BIN supports the same keys INKEY() does as well as the **Leftarrow** key.
2. Inkey.BIN operates similarly to INKEY() when INKEY() is used with SET ESCAPE OFF. Even if you SET ESCAPE ON, pressing **Esc** returns CHR(27) and does not terminate execution of your program.
3. Inkey.BIN returns the ASCII character corresponding to the correct INKEY() value instead of returning the actual numeric value. This is done since it is difficult to pass a numeric value to and from a LOADed module. When you use Inkey.BIN, for example, it returns a CHR(23) when you press **Ctrl-W**. In contrast, INKEY() returns a value of 23 for the same key press. To retain compatibility with INKEY(), use the ASC() function to convert the character value that Inkey.BIN returns to a numeric value.

4. INKEY() returns the values -1 through -9 for **F2** through **F10**. Since Inkey.BIN returns characters instead of values, it adds 256 to the expected return value for function keys **F2** through **F10**, as shown in the table below:

Key	INKEY()	Inkey.BIN
F1	28	28
F2	-1	255
F3	-2	254
F4	-3	253
F5	-4	252
F6	-5	251
F7	-6	250
F8	-7	249
F9	-8	248
F10	-9	247

In view of this difference, we suggest that you create memory variables for the function keys **F2** through **F10**, using the Inkey.BIN values shown above. Then refer to them by name instead of by their numeric values. This makes them easier to modify should you need to change these values. For example,

```
f1 = 28
f2 = 255
f3 = 254
.
.
.
```

5. Inkey.BIN waits in a long loop (65535 executions) for you to press a key. Without this loop, key presses may be missed requiring you to press the key several times before it registers. With the loop, Inkey.BIN never misses any key presses, but this does present a limitation. If no key is pressed, Inkey.BIN waits for one to six seconds (on an IBM XT, less time on an AT) before it returns to dBASE III PLUS. This means:

   - Inkey.BIN is fine for applications where the program is to stop and wait for a keystroke, process it, and then go on from there.
   - The INKEY() function is better for applications like Cbmenu.PRG on the dBASE III PLUS Samples disk, where it is used to test for a pressed key, updating the clock if no key is pressed. With Inkey.BIN, the clock is updated only about once every six seconds.

Setup

To set up Inkey.BIN, create the text file, Inkey.ASM, using MODIFY COMMAND or any text editor that writes to standard ASCII text files.

Then, assemble Inkey.ASM to a .BIN file. Before you begin, be sure that the following files are present, either in the same subdirectory as Inkey.ASM or through the DOS PATH command: MASM.EXE, LINK.EXE, and EXE2BIN.EXE. Follow the steps below to assemble Inkey.ASM as a .BIN file:

1. From the DOS prompt enter,

   MASM Inkey;

   This creates an object file (INKEY.OBJ).

2. Enter,

   LINK INKEY;

   This creates INKEY.EXE. Ignore "No stack segment" error message.

3. To create a .BIN file enter,

   EXE2BIN INKEY

4. Last, delete INKEY.EXE,

   ERASE INKEY.EXE
   ERASE INKEY.OBJ

Usage

To use Inkey.BIN, first LOAD it into memory. Then initialize a return variable to a value that would never used by Inkey.BIN. The example below uses CHR(200), although you may use any number between 128 and 246. You cannot, however, use CHR(0) to test if there is a key in the keyboard buffer since dBASE III PLUS cannot pass this value as the argument of the CALL command.

Finally, CALL it from within a DO WHILE keytrap loop. As stated before, if you want to evaluate the returned value using the values returned by INKEY(), use the ASC() function to convert the character to its numeric equivalent.

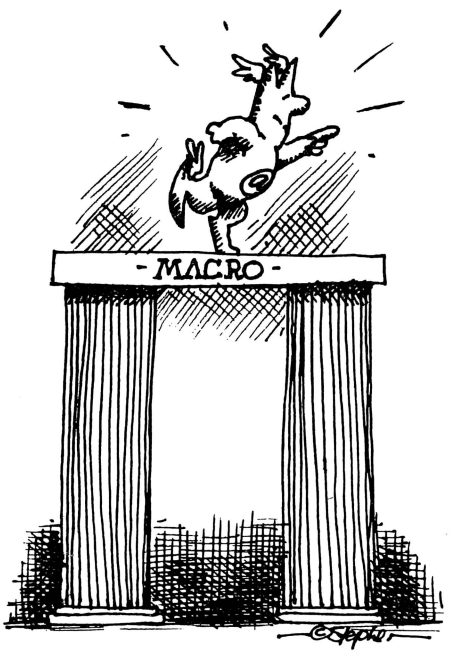
The following programs show the programming differences between INKEY() and Inkey.BIN:

With INKEY()	**With Inkey.BIN**
SET ESCAPE OFF	LOAD Inkey
SET TALK OFF	SET TALK OFF
x = 0	x = CHR(200)
DO WHILE x = 0	DO WHILE x = CHR(200)
x = INKEY()	CALL Inkey WITH x
ENDDO	ENDDO
? "INKEY(): " + STR(x,3,0)	? "Inkey.BIN: " + STR(ASC(x),3,0)

```
; Program ...: Inkey.ASM
; Author ....: Kenneth N. Getz
; Date ......: April 1, 1987
;
; .BIN file to be loaded from within dBASE III PLUS to replace the
; INKEY() function, since Version 1.1 doesn't trap Left Arrow correctly.
; The only differences are in the calling sequence (x = CHR(200),
; DO WHILE x = CHR(200)), in the return values (INKEY() returns an
; integer, Inkey.BIN returns a character), and in the use of function keys:
;
;               KEY     INKEY()         INKEY.BIN
;               ---     -------         ---------
;               F1      28              28
;               F2      -1              255
;               F3      -2              254
;               F4      -3              253
;               F5      -4              252
;               F6      -5              251
;               F7      -6              250
;               F8      -7              249
;               F9      -8              248
;               F10     -9              247
;
;
CODE    SEGMENT BYTE PUBLIC     'CODE
INKEY   PROC    FAR
        ASSUME  CS:code
START:  JMP     ENTRY
DELAY   DW      OFFFFH
TABLE   DB        0,  0,  0,  0,  0,  0,  0,  0,  0,  0
        DB        0,  0,  0,  0, 15, 16, 17, 18, 19, 20
        DB       21, 22, 23, 24, 25,  0,  0,  0,  0, 30
        DB       31, 32, 33, 34, 35, 36, 37, 38,  0,  0
        DB        0,  0,  0, 44, 45, 46, 47, 48, 49, 50
        DB        0,  0,  0,  0,  0,  0,  0,  0, 28,255
        DB      254,253,252,251,250,249,248,247,  0,  0
        DB        1,  5, 18,  0, 19,  0,  4,  0,  6, 24
        DB        3, 22,  7, 84, 85, 86, 87, 88, 89, 90
        DB       91, 92, 93, 94, 95, 96, 97, 98, 99,100
        DB      101,102,103,104,105,106,107,108,109,110
        DB      111,112,113,114, 26,  2, 23, 30, 29, 31
        DB       31, 31, 31, 31, 31, 31, 31, 31, 31, 31
        DB       31, 31
ENTRY:  PUSH    AX                      ; Save the registers used.
        PUSH    CX
        MOV     CX,DELAY                ; Set up for wait loop.
TOP:    MOV     AH,1                    ; Set for buffer poll.
        INT     16H                     ; See if key in buffer.
        JNZ     FOUND                   ; If so, jump out.
        LOOP    TOP                     ; Otherwise, try again DELAY times.
FOUND:  JZ      EXIT                    ; Quit if all the way through the loop.
        AND     AH,0                    ; Otherwise, set for buffer read.
        INT     16H                     ; Read the key from the buffer.
        CMP     AL,0                    ; See if we got an extended character.
        JNE     ENDIT                   ; If not, we're OK.
```

```
        PUSH    BX                      ; Otherwise, save BX for later.
        PUSH    DS                      ; Save DS for dBASE III PLUS.
        PUSH    CS                      ; Make CS and DS same for translation.
        POP     DS
        MOV     AL,AH                   ; Move extended value into AL.
        LEA     BX,TABLE                ; Get the address of the table.
        DEC     AL                      ; Subtract 1 to offset at 0.
        XLAT                            ; Do the lookup. Answer in AL.
        POP     DS                      ; Reset DS.
        POP     BX                      ; Reset BX.
ENDIT:  MOV     BYTE PTR [BX],AL        ;Send back character to dBASE III PLUS.
EXIT:   POP     CX                      ; Restore used registers.
        POP     AX
        RET
INKEY   ENDP
CODE    ENDS
        END     START
```

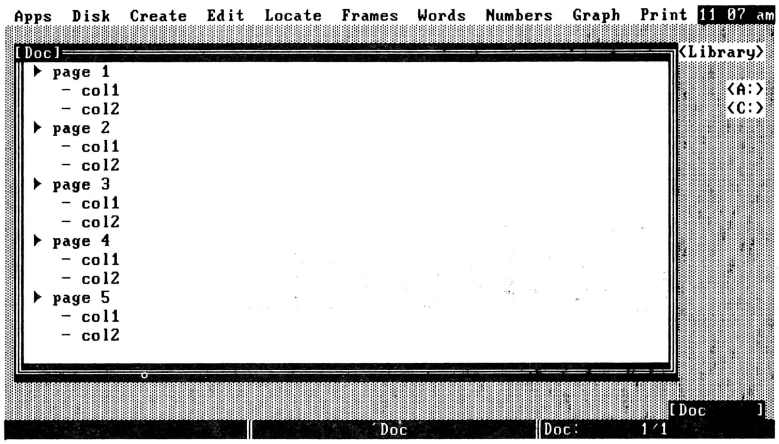
Dual Column Macro



BY KENT IRWIN AND
KAREN ROBINSON

One of the best ways to increase your efficiency with Framework II is to create and use macros. Macros allow you to record a series of keystrokes and then execute them by pressing an **Alt-** < key > combination. Once you determine the manual steps required for a task, you can use FRED to automate the steps, and then request the task with a single keystroke. One such example is the following macro, TwoCol.FW2. This macro allows you to format text into a two-column format, newspaper style, by copying text from a word frame to an outline frame which you can then print.

To implement this, TwoCol creates an outline frame, always called Doc, that contains a series of subframes, one for each printable page. Each page frame, in turn, has two subframes, one for each column. To format a page, TwoCol **DRAGs (F3)** the column frames into position with **Edit:Allow Free Dragging** ON. The illustration below shows an outline frame for a five-page document. Each subframe (Col1 and Col2) contains a column of information for one page. A page is 53 lines long and a column is 36 characters wide.

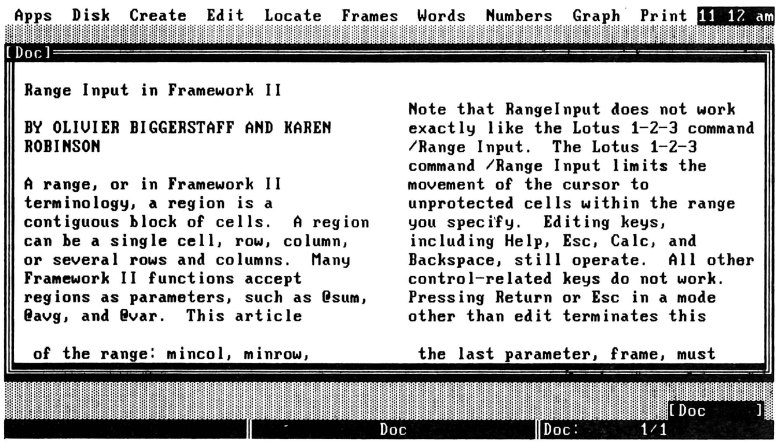


TwoCol is a simple formatting tool that handles one single-level word frame at a time, and works best on text that is in paragraph format. This means that it doesn't make particular allowances for special formatting, such as bulleted lists, tables, and variable margins. It simply sets the **Words:Left Margin** to 0 and the **Words:Right Margin** to 36, formatting the text as Framework II normally does with these settings. TwoCol then copies 53 lines at a time into a new frame, either Col1 or Col2, and positions these frames side by side within its containing frame.

If you want variable left margins, use spaces or tabs instead of changing the **Word:Left Margin** setting. For special formatting, set the margins of the original document to 0 and 36 so that you can work with the text within these boundaries. This will help you correctly format indented text and bulleted lists. Likewise, unless you are making only simple character changes to the text, edit the original document and then execute the macro again. Adding extra lines to the Col1 or Col2 frames throws off the line count and may result in truncated text when the document is printed.

TwoCol is divided into two routines: Mainpage and Makepage. Mainpage is the driving program. It sets the left and right margins to 0 and 36 respectively, begins a loop to create a new page (by calling the subroutine Makepage), and selects 53 lines of text from the original document using **@textselection** to assign the text to a column frame (either Col1 or Col2). It uses **@textselection** because it is faster than **COPY (F8)** and it doesn't require any cursor movement, which helps keep track of the line count. The loop continues until all of the text within the word frame is copied.

Makepage creates a containing frame for each page you wish to print (labeled Page1, Page2, and so on) with two subframes (Col1 and Col2). It also sizes and positions the frames within the containing frame.


Apps Disk Create Edit Locate Frames Words Numbers Graph Print 11 12 am
[Doc]
Range Input in Framework II
BY OLIVIER BIGGERSTAFF AND KAREN ROBINSON
A range, or in Framework II terminology, a region is a contiguous block of cells. A region can be a single cell, row, column, or several rows and columns. Many Framework II functions accept regions as parameters, such as @sum, @avg, and @var. This article
of the range: mincol, minrow,
Note that RangeInput does not work exactly like the Lotus 1-2-3 command /Range Input. The Lotus 1-2-3 command /Range Input limits the movement of the cursor to unprotected cells within the range you specify. Editing keys, including Help, Esc, Calc, and Backspace, still operate. All other control-related keys do not work. Pressing Return or Esc in a mode other than edit terminates this
the last parameter, frame, must
[Doc]
Doc
Doc: 1/1

Setup

To set up the program, create an empty word frame with two subframes. Label the containing frame,

{Alt-F} ; Two Column Printing

and the two subframes Mainpage and Makepage. Then enter the code below into the formula area of the appropriate frames. Once the code is entered, **MOVE (F7)** the macro frame into the Macro section of the Library.

Usage

To use the program, highlight a single-level word frame and press **Alt-F**. The message "Please wait..." displays at the bottom of the screen. When TwoCol is finished, you can print out the Doc outline frame.

TwoCol does not affect any of the **Print Format** or **Control Options**. Instead, it uses the current default settings. If you haven't changed the default settings through Framework II Setup, then it prints a 66-line page with the top and bottom margins set to 6 and an offset of 10. Because of the two-column format (36 characters each), it is best printed with a print pitch of 12 cpi instead of the standard 10 cpi. In either case, be sure to set the line length to at least 80. If you use a print pitch of 12 cpi, you can set **Print:Format Options:Offset from left** to 10. If you are using 10 cpi, set **Print:Format Options:Offset from left** to 0.

```
; Alt-F.FW2
;
;  by Kent Irwin
;     April 1, 1987
;
@[{Alt-F}].Mainpage
```

```
; Mainpage
;
;
@local(docname, looper, pageno, str),
@eraseprompt,
@prompt("Please wait...", 33),
@echo(#OFF),
looper  := #TRUE,
pageno  := 1,
docname := @setselection,
@if(@frametype = 14, @performkeys("{Uplevel}")),
@if(@frametype <> 9, @return(-1)),
@performkeys("{Ctrl-W}lO{Return}{Ins}R36{Return}"),
@performkeys("{Dnlevel}{Ctrl-Home}"),
@isabend(#FALSE),
@while(looper,
   @performkeys("{Uplevel}"),
   @makepage(pageno),
   @setselection(docname),
   ;
   @performkeys("{Dnlevel}{F6}{Ctrl-5}{Ctrl-2}{Dnarrow}{End}{Return}"),
   str := "page "&@integer(pageno)&".col1 := @textselection",
   @str,
   ;
   @performkeys("{Dnarrow}{Home}"),
   @performkeys("{F6}{Ctrl-5}{Ctrl-2}{Dnarrow}{End}{Return}"),
   str := "page " & @integer(pageno) & ".col2 := @textselection",
   @str,
   ;
   pageno := pageno + 1,
   @performkeys("{Dnarrow}{Home}"),
   @if(@isabend, looper := #FALSE)
),
@performkeys("{Uplevel}{Ctrl-C}EDoc{Return}"),
@setselection("Page 1"),
@performkeys("{F6}{End}{Uparrow}{F7}{Dnarrow}{Dnlevel}{Return}{Uplevel}"),
@echo(#ON)
```

```
; Makepage
;
; Creates a dual-column page.
;
@performkeys("{Ctrl-C}Epage " & @integer(@item1) & "{Return}{Dnlevel}" &
             "{Ctrl-C}Ecol1{Return}{Ctrl-W}lO{Return}{Ins}RO{Return}" &
             "{F4}{Ctrl-Home}{Ctrl-3}{Ctrl-5}{Rightarrow}" &
             "{Ctrl-5}{Ctrl-2}{Dnarrow}{Return}" &
             "{F8}{Return}Col2{Return}{Ctrl-F}a{F3}{Ctrl-Home}" &
             "{Ctrl-4}{Ctrl-O}{Rightarrow}{Return}{Home}" &
             "{Uplevel}{Ctrl-F}D{Ctrl-F}H{Ctrl-P}CB{Esc}"
)
```

TwoCol is an example of how to set up a macro to do special page formatting. It works best with word frames that have text in paragraph format. However, you can include tables and indented text if you work within the 0 to 36 margin boundaries.

Using the HP LaserJet With MultiMate Advantage

BY SUE RAPPORT, MERYL HOROWITZ,
AND LIZ BURKE

MultiMate Advantage supports more than 275 printers and has at least 28 Printer Action Tables (PATs) and 40 Character Width Translation tables (CWT tables) for the HP LaserJet's many font cartridges. Each font cartridge requires a different PAT and sometimes several CWTs. These PATs are provided so that you don't have to put the printer control codes into the document yourself. You can simply select the desired print pitch from the "Print Parameters For Document" screen. And, in MultiMate Advantage version 3.60 revision B, you can use the pitch change command (**Alt-C**) to change print pitches within a document to be printed in proportional spacing. If you have an earlier version than 3.60 revision B, you can change print pitches within a document only with nonproportional spaced cartridges such as the "A" cartridge. Table 1 lists the HP font cartridge name, the PAT filename, and the print attributes supported within each PAT. By using Table 1, you can easily see which print pitches to select for the desired print attributes. This list is continually updated as new HP LaserJet font cartridges become available. Contact Multimate Technical Support if you need a PAT that is not included with your package.

In addition to the common print attributes (**bold**, *italic*, and so on), some HP LaserJet cartridges are capable of printing legal, mathematical, and international characters. MultiMate Advantage version 3.3 and the Advantage series support math fonts on the "J" and "K" cartridges. Embedding math symbols in a MultiMate document is a special process and can be confusing. For this reason, we include instructions on how to do this. If you have MultiMate Advantage version 3.60 revision B, you can use either the "J" or "K" cartridges to get math symbols. If you have a version below 3.60 revision B, use only the "J" cartridge.

Selecting Math Fonts on the "J" or "K" Cartridge

The process of embedding math symbols in a MultiMate document is the same for both the "J" and "K" cartridges; only the PAT files and proportional spacing settings are different. If you are using the "J" cartridge, select LJETJ as the PAT file and "N" for the Proportional Spacing option on the "Print Parameters for Document" screen. The option for Proportional Spacing must be "N" because MultiMate does not recognize pitch changes (which are needed to print math symbols) in proportional spacing mode with fixed spaced cartridges such as the "J" cartridge. If you are using the "K" cartridge, select either the LJTK1PS or LJTK2PS (depending on the print style you want) as the PAT file and either "Y" or "N" for Proportional Spacing. Version 3.60 revision B is the only version that supports pitch changes within a document with proportional spaced cartridges such as the "K" cartridge. So, if you are using the "K" cartridge to get math fonts, you must have MultiMate Advantage version 3.60 revision B. And for both, set the default print pitch to either 1, 2, or 3; all of the other print pitches are for math symbols only. Refer to Table 1 for details regarding the differences in print pitch attributes for the LJETJ, LJTK1PS, and the LJTK2PS PAT files.

To use any of the special math characters, first find the character on the appropriate "Keyboard Chart" for the "J" cartridge and the "USASCII Keystroke Equivalency Table" for the "K" cartridge. These charts show the math symbol, the font type, and the keyboard character to use for that math symbol.

Below is a list of the font types:

Math 7
Math 8a
Math 8b
Pi font
Compressed 8a
Compressed 8b

Once you find the desired math symbol, refer to the appropriate PAT in Table 1 for the pitch that contains the correct math font.

To embed the character into your MultiMate document, use the **Alt-C** command to select the pitch that supports the math character, and then enter the keyboard character that represents the math symbol. Last, use **Alt-C** to reselect the default print pitch. For example, assume that you are using the "J" cartridge and want to print a pi symbol, , in your MultiMate document. The pi symbol is located on the Math 8A "Keyboard Chart" and the character that represents it is "p." Pitch 5 of the LJETJ PAT contains the Math 8A font. With this information, you would follow these two steps:

1. On the "Print Parameters For Document" screen, enter LJETJ for the PAT filename and 1 for the Default Pitch.
2. Within the MultiMate document, move the cursor to the appropriate location and then enter,

   Alt-C5p**Alt-C**1

When you print the document, the pi symbol prints in the location where you placed the math font command and the rest of the text prints in its default format.

Table 1

PAT Filename	HP Cartridge	Print Pitchs 1	2	3	4	5	6	7	8	9
LJETA	"A"	10 cpi Portrait Courier Upright Bold	10 cpi Portrait Courier Italic Light	*10 cpi Portrait Courier Upright Medium	*12 cpi Portrait Courier Upright Bold	12 cpi Portrait Courier Italic Light	12 cpi Portrait Courier Upright Medium	*10 cpi Landscape Courier Upright Medium	*12 cpi Landscape Courier Upright Medium	16.67 cpi Landscape Line Print Upright Light
LJETBPS	"B"	PS 14 Pt. Portrait Helvetica Upright Bold	PS 10 Pt. Portrait Tms Rmn Upright Medium	PS 10 Pt. Portrait Tms Rmn Upright Bold	PS 10 Pt. Portrait Tms Rmn Italic Medium	PS 8 Pt. Portrait Tms Rmn Upright Light	Same as Pitch 1	Same as Pitch 1	Same as Pitch 1	Same as Pitch 1
LJETBFS	"B"	*10 cpi Portrait Courier Upright Medium	12 cpi Portrait Courier Upright Medium	*10 cpi Landscape Courier Upright Medium	12 cpi Landscape Courier Upright Medium	16.67 cpi Landscape Line Print Upright Light	Same as Pitch 1	Same as Pitch 1	Same as Pitch 1	Same as Pitch 1
LJETC	"C"	*10 cpi Portrait Courier Upright Medium	10 cpi Portrait Courier Upright Bold	10 cpi Portrait Courier Italic Medium	12 cpi Portrait Courier Upright Medium	12 cpi Portrait Courier Italic Medium	*16.67 cpi Portrait Line Print Upright Medium	*10 cpi Landscape Courier Upright Medium	12 cpi Landscape Courier Upright Medium	16.67 cpi Landscape Line Print Upright Medium
LJETD	"D"	12 cpi Portrait P. Elite Upright Medium	12 cpi Portrait P. Elite Upright Bold	12 cpi Portrait P. Elite Italic Medium	10 cpi Portrait P. Elite Upright Medium	10 cpi Portrait P. Elite Upright Bold	10 cpi Portrait P. Elite Italic Medium	*10 cpi Portrait Courier Upright Medium	*10 cpi Landscape Courier Upright Medium	12 cpi Landscape Courier Upright Medium
LJETE	"E"	12 cpi Portrait Gothic Upright Medium	12 cpi Portrait Gothic Upright Bold	12 cpi Portrait Gothic Italic Medium	10 cpi Portrait Gothic Upright Medium	10 cpi Portrait Gothic Upright Bold	10 cpi Portrait Gothic Italic Medium	*10 cpi Portrait Courier Upright Medium	*10 cpi Landscape Courier Upright Medium	12 cpi Landscape Courier Upright Medium
LJETFPS	"F"	PS 14 Pt. Portrait Helvetica Upright Bold	PS 10 Pt. Portrait Tms Rmn Upright Medium	PS 10 Pt. Portrait Tms Rmn Upright Bold	PS 10 Pt. Portrait Tms Rmn Italic Medium	PS 8 Pt. Portrait Tms Rmn Upright Light	Same as Pitch 1	Same as Pitch 1	Same as Pitch 1	Same as Pitch 1
LJETFFS	"F"	*10 cpi Portrait Courier Upright Medium	12 cpi Portrait Courier Upright Medium	16.67 cpi Portrait Line Print Upright Medium	*10 cpi Landscape Courier Upright Medium	12 cpi Landscape Courier Upright Medium	Same as Pitch 1	Same as Pitch 1	Same as Pitch 1	Same as Pitch 1

*** These attributes print regardless of whether there is a font cartridge in the HP LaserJet.**

Table 1 (Continued)

PAT Filename	HP Cartridge	Print Pitches 1	2	3	4	5	6	7	8	9
LJETG	"G"	12 cpi Portrait P. Elite Upright Medium	12 cpi Portrait P. Elite Italic Medium	12 cpi Portrait P. Elite Upright Bold	16.66 cpi Portrait P. Elite Upright Medium	10 cpi Portrait P. Elite Upright Medium	10 cpi Portrait P. Elite Italic Medium	10 cpi Portrait P. Elite Upright Bold	16.67 cpi Landscape P. Elite Upright Medium	Same as Pitch 1
LJGLINE	"G"	12 cpi Portrait P. Elite Upright Medium	12 cpi Portrait P. Elite Italic Medium	12 cpi Por trait P. Elite Upright Bold	—	—	—	—	—	—
LJETH	"H"	10 cpi Portrait Courier Upright Medium	10 cpi Portrait Courier Italic Medium	10 cpi Portrait Courier Upright Bold	16.66 cpi Portrait P. Elite Upright Medium	16.66 cpi Landscape P. Elite Upright Medium	12 cpi Portrait Courier Upright Medium	12 cpi Portrait Courier Italic Medium	12 cpi Portrait Courier Upright Bold	Same as Pitch 1
LJHLINE	"H"	10 cpi Portrait Courier Upright Medium	10 cpi Portrait Courier Italic Medium	10 cpi Portrait Courier Upright Bold	Same as Pitch 1	Same as Pitch 1	Same as Pitch 1	Same as Pitch 1	Same as Pitch 1	—
LJETJ	"J"	12 cpi Portrait P. Elite Upright Medium	12 cpi Portrait P. Elite Italic Medium	16.67 cpi Portrait P. Elite Upright Medium	12 cpi Portrait Math 7 Upright Medium	12 cpi Portrait Math 8A Upright Medium	12 cpi Portrait Math 8B Upright Medium	12 cpi Portrait Pi font Upright Medium	16.67 cpi Portrait Cmprsd 8A Upright Medium	16.67 cpi Portrait Cmprsd 8B Upright Medium
LJTK1PS	"K"	PS 10 Pt. Portrait Tms Rmn Upright Medium	PS 10 Pt. Portrait Tms Rmn Italic Medium	PS 10 Pt. Portrait Tms Rmn Upright Bold	PS 10 Pt. Portrait Math 7 Upright Medium	PS 10 Pt. Portrait Math 8A Upright Medium	PS 10 Pt. Portrait Math 8B Upright Medium	PS 10 Pt. Portrait Pi font Upright Medium	—	—
LJTK2PS	"K"	PS 10 Pt. Portrait Tms Rmn Upright Medium	PS 10 Pt. Portrait Tms Rmn Italic Medium	PS 10 Pt. Portrait Tms Rmn Upright Bold	PS 10 Pt. Portrait Math 7 Upright Medium	PS 10 Pt. Portrait Math 8A Upright Medium	PS 10 Pt. Portrait Math 8B Upright Medium	PS 8 Pt. Portrait Tms Rmn Upright Medium	PS 8 Pt. Portrait Math 8A Upright Medium	PS 8 Pt. Portrait Math 8B Upright Medium
LJETL	"L"	10 cpi Landscape Courier Upright Bold	10 cpi Landscape Courier Upright Medium	*10 cpi Landscape Courier Upright Medium	12 cpi Landscape Courier Upright Bold	12 cpi Landscape Courier Italic Medium	12 cpi Landscape Courier Upright Medium	16.67 cpi Landscape Line Print Upright Medium	*10 cpi Landscape Courier Upright Medium	16.66 cpi Portrait Line Print Upright Medium

*** These attributes print regardless of whether there is a font cartridge in the HP LaserJet.**

Table 1 (Continued)

PAT Filename	HP Cartridge	Print Pitches 1	2	3	4	5	6	7	8	9
LJETM	"M"	12 cpi Portrait P. Elite Upright Medium	12 cpi Portrait P. Elite Upright Bold	12 cpi Portrait P. Elite Italic Medium	12 cpi Landscape P. Elite Upright Medium	12 cpi Landscape P. Elite Upright Bold	12 cpi Landscape P. Elite Italic Medium	*10 cpi Portrait Courier Upright Medium	*10 cpi Landscape Courier Upright Medium	Same as Pitch 1
LJETN	"N"	12 cpi Portrait Gothic Upright Medium	12 cpi Portrait Gothic Upright Bold	12 cpi Portrait Gothic Italic Medium	12 cpi Landscape Gothic Upright Medium	12 cpi Landscape Gothic Upright Bold	12 cpi Landscape Gothic Italic Medium	*10 cpi Portrait Courier Upright Medium	10 cpi Portrait Gothic Upright Bold	10 cpi Portrait Gothic Italic Medium
LJETPPS	"P"	PS 10 Pt. Portrait Tms Rmn Upright Medium	PS 10 Pt. Portrait Tms Rmn Upright Bold	PS 10 Pt. Portrait Tms Rmn Italic Medium	PS 10 Pt. Landscape Tms Rmn Upright Medium	PS 10 Pt. Landscape Tms Rmn Upright Bold	PS 10 Pt. Landscape Tms Rmn Italic Medium	Same as Pitch 1	Same as Pitch 1	Same as Pitch 1
LJETQ	"Q"	10 cpi Portrait Courier Upright Bold	10 cpi Portrait Courier Italic Medium	12 cpi Portrait Gothic Upright Medium	12 cpi Portrait Gothic Upright Bold	10 cpi Landscape Courier Upright Bold	10 cpi Landscape Courier Italic Medium	*10 cpi Portrait Courier Upright Medium	12 cpi Portrait Courier Upright Bold	12 cpi Portrait Courier Italic Medium
LJETRFS	"R"	6.5 cpi Portrait Pres. Bold Upright Bold	8.1 cpi Portrait Pres. Bold Upright Bold	10 cpi Portrait Pres. Bold Upright Bold	10 cpi Portrait Ltr. Gothic Upright Medium	6.5 cpi Landscape Pres. Bold Upright Bold	8.1 cpi Landscape Pres. Bold Upright Bold	10 cpi Landscape Pres. Bold Upright Bold	10 cpi Landscape Ltr. Gothic Upright Medium	—
LJETTPS	"T"	PS 14 Pt. Portrait Helvetica Upright Bold	PS 12 Pt. Portrait Helvetica Upright Bold	PS 10 Pt. Portrait Helvetica Upright Bold	PS 8 Pt. Portrait Helvetica Upright Light	PS 8 Pt. Portrait Helvetica Upright Medium	PS 6 Pt. Portrait Helvetica Upright Bold	Same as Pitch 1	Same as Pitch 1	Same as Pitch 1
LJETUFS	"U"	10 cpi Portrait Courier Uprt. Med T.Line Box	*10 cpi Portrait Courier Uprt. Bold U Line Box	16 cpi Portrait Ltr Gothic Uprt. Bold U Cartridge	Same as Pitch 1	Same as Pitch 1	Same as Pitch 1	Same as Pitch 1	Same as Pitch 1	—

*** These attributes print regardless of whether there is a font cartridge in the HP LaserJet.**

Table 1 (Continued)

PAT Filename	HP Cartridge	Print Pitches 1	2	3	4	5	6	7	8	9
LJETUPS	"U"	PS 14 Pt. Portrait Helvetica Upright Bold	PS 12 Pt. Portrait Helvetica Upright Bold	PS 10 Pt. Portrait Helvetica Upright Bold	PS 8 Pt. Portrait Helvetica Upright Medium	PS 6 Pt. Portrait Helvetica Upright Bold	Same as Pitch 1	Same as Pitch 1	Same as Pitch 1	Same as Pitch 1
LJETVPS	"V"	PS 14 Pt. Landscape Helvetica Upright Bold	PS 12 Pt. Landscape Helvetica Upright Bold	PS 10 Pt. Landscape Helvetica Upright Bold	PS 8 Pt. Landscape Helvetica Upright Medium	PS 6 Pt. Landscape Helvetica Upright Medium	Same as Pitch 1	Same as Pitch 1	Same as Pitch 1	Same as Pitch 1
LJETW	"W"	10 cpi Portrait Gothic 14 Pt. Upright Medium	16.66 cpi Portrait Gothic 9.5 Pt. Upright Medium	10 cpi Portrait OCR A 12 Pt. Upright Medium	4.6 cpi Portrait Barcode 12 Pt. Upright Medium	9.3 cpi Portrait Barcode 12 Pt. Upright Medium	10 cpi Portrait Line Draw 12 Pt. Upright Medium	Same as Pitch 1	Same as Pitch 1	Same as Pitch 1
LJETX	"X"	10 cpi Portrait Gothic Upright Medium	16.67 cpi Portrait Gothic Upright Medium	10 cpi Portrait OCR-B Upright Medium	10 mil Portrait EAN/UPC Upright Medium	13 mil Portrait EAN/UPC Upright Medium	—	—	—	—
LJETY	"Y"	10 cpi Portrait Courier Upright Medium	10 cpi Portrait Courier Upright Bold	10 cpi Portrait Courier italic Medium	16 cpi Portrait Line Pntr Upright Medium	16 cpi Landscape Line Pntr Upright Medium	—	—	—	—

*** These attributes print regardless of whether there is a font cartridge in the HP LaserJet.**

The HP LaserJet printers offer a wide variety of print styles and fonts. The trick is knowing how to use them. The first step is knowing what is available. Table 1 provides this information. Use it as a reference when selecting and changing fonts and PATs. The second step is getting MultiMate to take advantage of the many available fonts and print styles. For most tasks, it's simply a matter of selecting the correct PAT and print pitch; Table 1 helps with that. And for a task that is less obvious, embedding math fonts, we've included instructions. Knowing how to use the HP LaserJet fonts with MultiMate means creating more professional-looking documents.

USAGE TIPS

Framework II

BY SOFTWARE SUPPORT TECHNICIANS

@diffdate

Page 1-74 in *Framework II Advanced Topics* states that the following formula returns the value 60.

```
@diffdate(@today, @sumdate(@today, + 60))
```

This formula actually returns the value -60.

Formal Definition of a Keyword

If you are programming a words-oriented application, you may have noticed that certain characters are not included as you highlight your way through a block of text with **Ctrl-Rightarrow**. This is particularly important if you are creating programs that analyze computer programs, which of course contain many kinds of symbols. The following table describes the definition of a word in Framework II. It uses the method of metalanguage definition defined on page 56 of *Framework: A Programmer's Reference*.

The definition uses the following set of metasymbols as the basis of the description language:

Metasymbol	English
|	or
~	not
:: =	is defined as
< >	the construct
[]	optional
[]*	optional, 0 or more times

	Definition of a Word
word	::= [<alphabet>]*[<blank>]*
alphabet	::= <letter>|<digit>|<special char>
letter	::= A|B|C|D|E|F|G|H|I|J|K|L|M|N|O|P|Q|R|S|T|U|V|X|Y|Z |a|b|c|d|e|f|g|h|i|j|k|l|m|o|n|p|q|r|s|t|u|v|x|y|z
digit	::= 0|1|2|3|4|5|6|7|8|9
special char	::= @|#|-|+|'|{hard space}
blank	::= {soft space}|{tab}
white space	::= ~<alphabet>

Reference: Forefront Corporation. *Framework, A Programmer's Reference.* Culver City: Ashton-Tate, 1984.

Prompt Change for DOS Access in Calling Batch Files

If you go into DOS Access often, invariably you forget to exit and instead reload Framework II, discovering this only when you have mysteriously lost memory. You can prevent this by changing the prompt to indicate when you are in DOS Access before you enter Framework II. Then when you enter DOS Access, the new prompt reflects that fact.

Call Framework II from a batch file to set the DOS Access prompt before loading and reset the prompt to its original setting after you leave Framework II. The following batch file demonstrates the commands necessary to do this:

```
REM Prompt reassignment batch file.
REM
PROMPT = $LDOS Access $P$G
REM
FW/T
REM Reset the old prompt.
MODE CO80
PROMPT = $P$G
```

Whenever you enter DOS Access and are in the root directory, you will have the following prompt:

```
<DOS Access C:\>
```

Scroll Rate

If you find scrolling through screens one line at a time somewhat tedious but want to scroll less than a screen page at a time, the following macro, **Alt-0**, will help you. Essentially, it is designed to keyfilter the **Ctrl-Uparrow** and **Ctrl-Dnarrow** keys so they perform the **Uparrow** and **Dnarrow** keys the number of times you specify. When you press **Alt-0**, you are queried for the number of lines that you want to scroll each time you press **Ctrl-Uparrow** or **Ctrl-Dnarrow**. You then scroll at the speed you wish. To restore these keys to their default definitions, specify the number of lines to scroll as one or less.

To set up the macro, create a containing frame labeled {Alt-0}. Then create three subframes labeled Mainrate, Pager, and Rate. Next, type in the following programs into the formula areas of the indicated frames. Finally, **MOVE (F7)** the {Alt-I} frame into the Library cabinet, and save the Library with **Ctrl-Return**.

Note, Rate does not have a formula and exists only as a global memory variable to hold the scrolling rate.

```
; Alt_0.FW2
;
;  by Kent Irwin
;     April 1, 1987
;
@[{Alt-0}].Mainrate
```

```
; Mainrate
;
@eraseprompt,
rate := @inputline("How many lines to scroll?"),
@if(@or(rate = "1", rate = ""),
   @list(@keyfilter({Ctrl-Uparrow}),
         @keyfilter({Ctrl-Dnarrow}),
         @return(0)
   )
),
@keyfilter({Ctrl-Uparrow}, pager),
@keyfilter({Ctrl-Dnarrow}, pager)
```

```
; Pager
;
@select(@len(rate),
   @performkeys("{Ctrl-" & @mid(rate,1,1) & "}" & @keyname(@key)),
   @performkeys("{Ctrl-" & @mid(rate,1,1) & "}" &
                "{Ctrl-" & @mid(rate,2,1) & "}" & @keyname(@key)),
   @performkeys("{Ctrl-" & @mid(rate,1,1) & "}" &
                "{Ctrl-" & @mid(rate,2,1) & "}" &
                "{Ctrl-" & @mid(rate,3,1) & "}" & @keyname(@key)),
)
```

SIDEWAYS

If you want to print spreadsheets in a landscape orientation and you don't have a laser printer, you might explore the third party product, SIDEWAYS. You can use this utility in combination with Framework II by exporting to a text file and then printing it with SIDEWAYS. To do this, perform the following steps:

1. Bring the spreadsheet to be printed with SIDEWAYS to the desktop.
2. Select **Export:ASCII Text** from the **Disk** pull-down menu. This creates a .TXT file with the same name as the spreadsheet.
3. Quit Framework II, load SIDEWAYS for Text Files, select print options, enter the name of the exported spreadsheet, and press **Return** to begin printing. Please note that the SIDEWAYS "glue lines" feature should be set at 0.

dBASE Administrator

BY RICHARD BUNTER

Protect Database Re-encryption

Attempting to encrypt a database file when there is a .CRP file with the same name in the current directory results in the error message " < filename > .crp already exists, overwrite it? (Y/N)." If you press "Y," the file access and field access privilege levels are set to the default values and not to the values in the existing .CRP file. These changes are stored in memory and do not affect the existing .CRP file until **Save** is selected from the **Exit** menu.

DISPLAY USERS

The file LOGIN.DB contains the network-assigned workstation names of users currently logged into dBASE III PLUS. dBASE III PLUS reads the LOGIN.DB file that resides in the current directory, and only users who log in from the current directory are added to the LOGIN.DB file. So, to accurately reflect the current users, all users must log in from the same directory.

The same is true when logging out. To correctly update the LOGIN.DB file, users must log out from the same directory they logged in from.

IBM Problems

IBM reports that there is a possibility of data errors when an IBM Personal Computer XT with a 256/640KB system board and a fixed disk drive installed is used with an IBM PC Network Adapter Card that has a bar-code number starting with 064 or 074. IBM will replace the motherboard of these units if the following three conditions exist:

1. The model number on the XT is one of the six below and the serial number is within the range below.

Model Number	Serial Number Range
5160268 or 5160267	2,000,001 – 2,069,392
5160278 or 5160277	3,000,001 – 3,034,646
5160089 or 5160088	4,000,001 – 4,083,500

2. A fixed disk drive is installed.
3. The IBM PC Network Adapter Card installed has a bar-code number that begins with 064 or 074.

The user can physically inspect the lower edge of the card for the bar-code or use the following BASIC program to determine if the bar-code number begins with 064 or 074.

```
10 DEF SEG = &HCC00
20 FOR X = &H1FF5 TO &H1FFC
30 PRINT CHR$(PEEK(X));
40 NEXT
```

After running this BASIC program, pressing **F2** displays a date. If the date displayed is 04/16/85, the IBM PC Network Adapter card has a bar-code number beginning with 064 or 074.

dBASE III PLUS

BY SOFTWARE SUPPORT TECHNICIANS

ASSIST and Subdirectories

If you are an ASSIST user, you may have found that you cannot change directories in ASSIST. The following program, Subdir.PRG, allows you to provide support for subdirectories by running ASSIST from a menu that includes choices for changing directories.

Whenever you want to enter ASSIST, type DO Subdir and choose the directory where you want to work. When you are situated, choose the option for ASSIST and away you go. After you leave ASSIST, you must also quit Subdir. Subdir then CLOSEs all the DATABASES you may have opened.

If you want Subdir to come up automatically whenever you bring up dBASE III PLUS, add the command line

```
COMMAND = DO Subdir
```

to your Config.DB file.

The program operates by selecting subdirectories from the current default directory you boot dBASE III PLUS from. After it loads (this can take some time), you can move forward to all of the subdirectories under the current one and back. You can run ASSIST from any selected subdirectory.

Subdir has, in addition, a number of small but significant features. For example, it displays the volume label for the current drive. It has row and column coordinates that may be modified to change the display location of the menu window. It also displays the default directory name, so you always know where you started.

There are, however, some limitations to be aware of:

1. Subdir only displays the first 9 subdirectories it encounters, no matter how many there are in the default directory.
2. It does not allow the user to navigate anywhere on the disk.
3. It does not display sub-subdirectories.

```
* Program ...: Subdir.PRG
* Author ....: Stephen Goodman and Olivier Biggerstaff
* Date ......: April 1, 1987
* Note(s) ...: Executes a menu that allows you to change your DOS
*              directories in association with ASSIST.
*
SET TALK OFF
SET BELL OFF
SET SAFETY OFF
SET TITLE OFF
CLEAR
*
* ---This portion creates a database file to hold the
* ---names of the subdirectories in the current directory.
@ 12,2 SAY "Reading directory - Please wait"
RUN DIR > Sysdir.TXT
SET CATALOG TO Sysdir
SELECT 10
COPY STRUCTURE EXTENDED TO Tempfile
SET CATALOG TO
SELECT 1
USE Tempfile
ZAP
APPEND BLANK
REPLACE field_name WITH "Textdata",;
        field_type WITH "C",;
        field_len WITH 80
USE
CREATE SYSDIR FROM Tempfile
APPEND FROM Sysdir.TXT SDF
DELETE FILE Tempfile.DBF
DELETE FILE Sysdir.TXT
DELETE FILE Sysdir.CAT
*
* ---The drive and volume label are saved to variables.
GOTO 2
drive = SUBSTR(Textdata, 18, 1) + ":"
title = TRIM("Available Directories" + ;
         IIF(SUBSTR(Textdata, 23, 1) = " ", "", " for " + SUBSTR(Textdata, 23)))
*
* ---The current directory is the default.
GOTO 3
d_default = drive + TRIM(SUBSTR(Textdata, 18))
*
* ---Delete all non-subdirectory entries.
DELETE FOR SUBSTR(Textdata, 1, 1) = ".";
      .OR. SUBSTR(Textdata, 14, 5) <> "<DIR>"
PACK
*
* ---Read the database file into memory variables.
dot = .F.
GOTO TOP
DO WHILE .NOT. EOF()
   datanum      = LTRIM(STR(RECNO()))
   data&datanum = SUBSTR(Textdata, 1, 8)
   IF SUBSTR(Textdata, 10, 1) <> " "
      data&datanum = data&datanum + "." + SUBSTR(Textdata, 10, 3)
      dot = .T.
```

```
   ENDIF
   SKIP
ENDDO
*
* ---The maximum number of subdirectories is 9.
maximum = LTRIM(STR(MIN(9, RECCOUNT())))
USE
DELETE FILE Sysdir.DBF
maxlength = LEN(d_default) + 11 + IIF(dot, 0, 4)
maxlength = MAX(LEN(title), maxlength) + 6
line = CHR(199) + REPLICATE(CHR(196), maxlength - 2) + CHR(182)
default = .T.
choice  = " "
mchoice = " "
DO WHILE .T.
   choice = " "
   CLEAR
   row = 6
   col = 4
   *
   * ---Draw a double lined box.
   @  row - 2,  col - 3 TO VAL(maximum) + 12, maxlength DOUBLE
   @  row + 1, col - 3 SAY line
   @  row - 1,  col     SAY title
   *
   * ---If there are no subdirectories, say so.
   IF maximum = "0"
      @ row, col SAY "None in "+d_default
   ELSE
      @ row + 5, col - 3 SAY line
      @ row, col - 1      SAY IIF(default, CHR(175), " ") + "Default is " + d_default
   ENDIF
   @ row + 2, col SAY "A. Run ASSIST"
   @ row + 3, col SAY "B. Go to Default"
   @ row + 4, col SAY "E. Exit"
   *
   * ---Display the subdirectory names in the box.
   datanum = "1"
   DO WHILE datanum <= maximum
      @ row + VAL(datanum) + 5, col SAY datanum + ". Directory " + data&datanum
      datanum = LTRIM(STR(VAL(datanum) + 1))
   ENDDO
   IF .NOT. default .AND. mchoice $ "123456789"
      @ row + VAL(mchoice) + 5, col - 1 SAY CHR(175)
   ENDIF
   @ row + VAL(datanum) + 7, col SAY "Enter selection: "
   choice = " "
   mcol = COL()
   DO WHILE .NOT. (choice $ "ABE" .OR. (choice >= "1" .AND. choice <= maximum))
      choice = " "
      @ row + VAL(datanum) + 7,mcol + 1 GET choice PICTURE "!"
      READ
   ENDDO
   *
   * ---Change directory, run ASSIST, or exit to dBASE III PLUS.
   DO CASE
   CASE choice = "A"
      ASSIST
```

```
   CASE choice = "B"
      CLEAR
      RUN CD &d_default
      default = .T.
   CASE choice = "E"
      EXIT
   CASE choice >= "1" .AND. choice <= maximum
      mchoice = choice
      CLEAR
      d_choice = data&choice
      IF LEN(d_default) = 3
         RUN CD \&d_choice
      ELSE
         RUN CD &d_default\&d_choice
      ENDIF
      default = .F.
  ENDCASE
ENDDO
*
* ---Close up and return to the default directory.
CLEAR
CLOSE DATABASES
RUN CD &d_default
SET TALK ON
SET SAFETY ON
SET TITLE ON
RETURN
* EOP Subdir.PRG
```

Compaq 386 DOS

Running dBASE III PLUS on a Compaq 386 requires Compaq 386 DOS, not standard MS-DOS. To check whether a machine is running Compaq 386 DOS, enter the DOS MODE command at the prompt using the AUTO parameter (a valid parameter of Compaq 386 DOS only). For example, at the operating system, type

C> MODE AUTO

If the error message "Invalid parameter" is returned, the machine is running the wrong version of DOS. Running the wrong DOS may cause problems with system I/O.

EOF()

When you execute REINDEX or PACK on an indexed database file, the record pointer is positioned to the end-of-file and EOF() returns a true (.T.). By contrast, INDEX ON and PACK position the record pointer to the first record when used on non-indexed database files.

This occurs in both versions of dBASE III PLUS.

Error Messages

The error message "Invalid DIF vector - DBF field mismatch" is undocumented in the original dBASE III PLUS documentation. This error message occurs when APPENDing FROM a DIF file and data in that file conflicts with the DIF header.

Floating Dollar Signs

dBASE III PLUS does not directly support the display of numbers right-justified with a floating dollar sign. To achieve a floating dollar sign to either print or display numeric data, you can use the following expression.

```
RIGHT(SPACE(<length of number>) + "$" + ;
      LTRIM(TRANSFORM(<number>, "999,999,999,999.99"),
      <length of number>)
```

This expression can be used wherever dBASE III PLUS accepts the result of a character expression. This includes @...SAY, ??, LABEL, and REPORT FORMS.

GETENV()

You can use DOS environmental variables to set and hold locational pointers to various directories for the purpose of installing application systems. Many modern programs are now so large they require the use of subdirectories to control the location of information. In view of this, many use the DOS environmental variable technique to accomplish the needed control.

In order to gain the same power with dBASE III PLUS and your programs, use GETENV() to return the contents of environmental variables that each hold a directory pointer for a specific set of files. Remember that GETENV() can return not only system variables that DOS uses, such as PATH or COMSPEC, but also environmental variables that you assign in DOS. You can assign these variables from anywhere in DOS, but many programs that use this directory pointer system initialize the environmental variables in the AUTOEXEC.BAT.

This type of a system in dBASE III PLUS would consist of creating three basic classes of files (.PRG, .DBF, and .NDX) with three potential locations. You could, of course, have many more, but these serve the purposes of example.

To set this up, you need first to create the environmental variables in DOS with a series SET command lines as follows:

```
SET DB_DIR = <database file directory path>
SET PRG_DIR = <program file directory path>
SET NDX_DIR = <index file directory path>
```

In the initialization area of your main application program you need to define a series of memory variables using GETENV() that correspond to the DOS environmental variables you have set up. For example,

```
db_dir  = GETENV("DB_DIR")
prg_dir = GETENV("PRG_DIR")
ndx_dir = GETENV("NDX_DIR")
```

Now that you have the directory pointer variables for each class of file, you can use them to either SET the dBASE III PLUS PATH to the list of valid directories or you can use them explicitly in file access commands. For example,

```
SET PATH TO &db_dir., &ndx_dir., &prg_dir.
```

or

```
USE &db_dir.\<database file> INDEX &ndx_dir.\<index file>
```

and

```
DO &prg_dir.\<program name>
```

One of the problems you may encounter using this technique is not having enough

environment space for your variable definitions. This can happen if, for example, you have a long PATH statement. You can, however, change the size of the DOS environment if you are running under PC/MS-DOS 3.1 and above with the undocumented CONFIG.SYS command SHELL. The general syntax of the SHELL command is as follows:

SHELL = C: < path > \ < command processor > C: < path > /P/E: < number of paragraphs >

When you wish to use SHELL, place it in your CONFIG.SYS file along with the traditional FILES and BUFFERS settings. To set up the SHELL command line, specify the path to your command processor, the name of your command processor (usually COMMAND.COM), the path again, a space, the /P and /E: switches (no spaces between them), and the number of 16-byte paragraphs to allocate to the environment space. If you do not specify the number of paragraphs, the default is 8 or a total of 128 bytes. If you do specify a /E: setting, the acceptable range is 11 to 63.

Be aware that the order and spacing of the SHELL command arguments are vital.

Reference:

DeVoney, Chris. *Using PC DOS*. Indianapolis, Indiana: Que Corporation, 1986. pps. 487-488.

IIF()

dBASE III PLUS parses the entire IIF() statement before executing the function. If either parameter is erroneous, then the entire function returns an error. For example,

```
mem = "dBASE"
? IIF(.T., mem, SUBSTR(mem, 10, 3))
```

returns the error message "***Execution error on SUBSTR() : Start point out of range" even though the false condition is never executed. The IIF() function requires that each argument be a valid expression.

This is true for versions 1.0 and 1.1 of dBASE III PLUS.

LIST PROCEDURE

Often, when you are modifying an existing application where you have merged a number of command files into a procedure file, you may want to get a list of procedures. You can do this easily using the DOS utility, FIND.EXE. FIND is a very fast, free text-search program that searches for a specified string anywhere in a file, returning the lines where the search argument is found. Optionally, FIND will return line numbers as well. Unfortunately, searches are case-sensitive and case is not a configurable option. You can, however, use this to your advantage by always making the PROCEDURE declaration uppercase and any other uses (in comments and in the SET and CLOSE PROCEDURE commands) some combination of case and word length.

To list procedures from the DOS prompt use the following command line,

```
FIND "PROCEDURE" < procedure file name >
```

You can, off course, RUN this command line from within dBASE III PLUS or you can create a command file that calls FIND and constructs the FIND command like the following,

```
PROCEDURE Proc_file
```

```
RUN FIND "PROCEDURE" &Proc_file..PRG
RETURN
```

If you want to include line numbers in the listing, add /N to the FIND command line.

LOCATE/CONTINUE

To use CONTINUE, a search or scope condition must be specified in the preceding LOCATE command, although a LOCATE without a FOR or WHILE condition does not cause an error and positions the record pointer at the top of the file. However, following that LOCATE with CONTINUE returns the error message "CONTINUE without LOCATE".

ASSIST does not prevent users from selecting **Continue** in this way. In ASSIST, executing **Position:Locate** with no condition positions the record pointer at the top of the file and activates **Position:Continue**. Choosing **Position:Continue** returns the error message "CONTINUE without LOCATE."

This occurs in versions 1.0 and 1.1 of dBASE III PLUS.

Printing

dBASE III PLUS handles printing differently from earlier versions of dBASE III. Earlier versions of dBASE III relied on DOS to handle printer status errors. All error messages were generated and handled by DOS. dBASE III PLUS uses a different DOS call to send characters to the printer port. This new routine is faster but also returns a printer port time-out error more quickly. dBASE III PLUS checks the port status at initialization; errors occurring after initialization are handled by DOS. Because of these differences, it is possible to get error messages in dBASE III PLUS when none would occur in dBASE III. The differences are:

1. When the print device is activated, dBASE III PLUS checks the printer port for two specific conditions: "Invalid printer port" and "Printer is either not connected or turned off." If neither condition is true but an error is still detected, dBASE III PLUS defaults to the "Printer not ready" error message. For example, on a parallel printer, pin 12 is used to signal a "paper out" condition. If pin 12 is missing or broken on a cable, dBASE III PLUS checks the status of the printer port, finds an error condition that does not meet one of the two specific conditions that are tested, and returns the default error message, "Printer not ready."

   "Invalid printer port" occurs when redirecting the printer to an invalid port, such as LPT4.

   "Printer is either not connected or turned off" may occur when redirecting the printer to a valid COM port and attempting to print when that port does not have a printer attached to it.

2. Because different DOS versions have different time-out intervals for the printer port, some DOS versions time out while waiting for the print buffer to empty. This will generate the DOS error message "Printer not ready. Retry? (Y/N)." This situation can be corrected by issuing the DOS command

   ```
   MODE LPT1:,,P
   ```

The "P" parameter at the end of the command line above instructs DOS to infinitely retry the printer port. This prevents the port from timing out. Error conditions (such as paper out or printer not connected) may appear to hang the machine while DOS infinitely retries the port. Unless the error condition is resolved, a warm boot is required to terminate the process.

SET PROCEDURE TO

Beginning in Developer's Release, you can have a command file that SETs PROCEDURE to itself, effectively allowing you to create single file applications such as those you could create with dBCODEing and dBLINKing.

Additionally, you can CLOSE the PROCEDURE within the calling program. Be sure, however, you do not CLOSE PROCEDURE within any of the procedures or dBASE III PLUS will return the error message "File is already open."

For example,

```
* ---Sayhello.PRG
SET PROCEDURE TO Sayhello          && SETs PROCEDURE TO itself.
DO Proc1
DO Proc2
CLOSE PROCEDURE
RETURN

PROCEDURE Proc1
? "Hi there, I'm procedure number One and I love black beans."
RETURN

PROCEDURE Proc2
? "Howdy, I'm procedure number Two and I'm a Taurus."
RETURN
* EOP Sayhello.PRG
```

In dBASE III version 1.1, doing this returned the error message "File is already open."

MultiMate

BY SUE RAPPORT, MERYL HOROWITZ, AND LIZ BURKE

Printing Legal-Size and Letter-Size Documents With The HP LaserJet

The HP LaserJet printer gives you the capability to print both legal and letter-size documents, regardless of whether the paper tray is the proper size. Normally, switching from letter size to legal size requires you to turn off the printer and change paper trays. MultiMate, through a modification to your Printer Action Table (PAT), will allow you to print both letter and legal-size documents without having to change paper trays. The instructions that follow create two PAT files, one for letter size (LJETA.PAT) and the other for legal size (LEGAL.PAT) documents.

Creating a PAT for Letter-Size Documents

1. Follow the instructions in the *Advanced User's Guide* to get into the Advanced Utilities and modify LJETA.PAT.
2. From the "Edit PAT" menu, highlight the Vertical Movement option and press **F10**.
3. Enter this code for the Set Page Length In Inches token: 1B266C363650.
4. Highlight Save Pat File (with same name) and press **F10**. This save the PAT file with the same name.

Creating a PAT for Legal-Size Documents

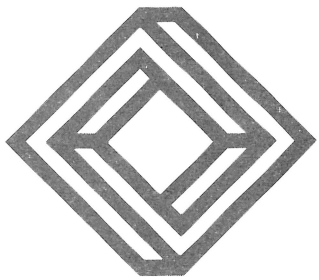
1. Again, from the "Edit PAT" menu, highlight the option Vertical Movement and press **F10**.
2. Enter this code for the Set Page Length In Inches token: 1B266C383450 and press **F10**.
3. Highlight the option Save Pat File (with new name) and enter LEGAL as the filename, then press **F10**. This saves the PAT file under the name LEGAL.PAT.
4. Press **Esc** three times to return to DOS.

When printing a document, the "Print Parameters For Document" screen displays both PATs, LJETA.PAT and LEGAL.PAT. Specify LJETA as the Printer Action Table when printing letter-size documents and LEGAL as the Printer Action Table when printing legal-size documents. You do not have to turn the printer off when switching from one to the other.

Missing Characters

Some printers only print 80 columns across, although in MultiMate you can set your format line length to 156. If the format line length is longer than the line length of your printer, text may be truncated when printed. This is definitely true with the HP LaserJet printers; text at the end of a line is truncated when the format line length is too long. To resolve this problem, either shorten the format line length or reduce the left margin setting on the "Print Parameters for Document" screen.

ANOMALIES



DEFINITION OF ANOMALY

We use the word "anomaly" to mean any one of the following:

> INCORRECT COMMAND (or function) IMPLEMENTATION.
> A command or function does not execute as specified.
>
> INCOMPLETE COMMAND (or function) IMPLEMENTATION.
> A command or function does not execute as specified in every use of the command or function.
>
> DATA OR LOGICAL BOUNDARY LIMITATION. A command or function cannot perform an operation at a specified data or logical boundary.

NOTE: Ashton-Tate reserves the right to withhold any further information that may reveal proprietary or trade secret information.

Framework II

Bold on the Epson DX-20

The Epson DX-20 printer turns the bold attribute off when it receives a carriage return. As a result, if an entire paragraph is boldfaced, only the first line will print in bold.

The work-around is to set **Words:Bold** ON at the beginning of every line in the paragraph to be boldfaced.

English Name References

Framework II returns the error message "Undefined reference" if a formula uses **@execute** to filter a database under the following conditions:

1. The filter formula uses a reference instead of a literal.
2. A spreadsheet cell is then referenced using English name references.

As an illustration, examine the following formula that recreates the problem.

```
; Prog.FW2
;
@execute(Testdb, F1 = Var),
@put(Testss.Col1.Row1, @get(Testdb.F2))
```

When Prog is recalculated **@execute** places the filter formula "F1 = Var" into the formula area of the database labeled Testdb and then recalculates it. The next line of the formula references cell B2 in the spreadsheet frame labeled Testss, using English name references, and generates the error message "Undefined reference." If **@execute** is removed from the formula, no error message is returned and the formula executes correctly. Additionally, using a literal value in place of the reference Var allows the formula to execute as expected.

You can work around this in a general way by building the **@execute** function into a user-defined function and concatenating the value of Var as a literal value. For example,

```
@local(func),
func := "@execute(Testdb, F1 ="""" & Var & """")",
@Func,
@put(Testss.Col1.Row1, @get(Testdb.F2))
```

This problem occurs in both version of Framework II.

IBM DCA Import

Framework II does not correctly Import an IBM DCA/Displaywrite file created with **Disk:Export:IBM DCA/Displaywrite**. In version 1.0 of Framework II, the imported file contained two extra blank lines at the top, 63 extra blank lines at the bottom, and the left margin was increased by 10.

In version 1.1 of Framework II, the imported file contains an extra blank line at the top, two extra blank lines at the bottom, and the left margin is increased by 20.

The work-around is to adjust the margins and remove the blank lines after importing the file.

Macros/Emulation

If a Library macro issues a local command with **Ctrl-Ins**, while you are in terminal emulation, your computer may freeze. As an illustration, the following Library macro causes the system to freeze after the user is prompted to "Enter Filename:."

```
@performkeys("{Ctrl-Ins}Capt ON{Return}")
```

The same formula, however, works if you use it in a Telecomm macro, or if you enter the filename in the **Apps: Telecommunications:Text Transfer:Download/Receive:Name for Capture File** option before the macro is invoked.

This happens in both versions of Framework II.

Precedence Order for Operators

Framework II does not always follow the precedence order for operators described in *Framework II Advanced Topics* on pages 1-37 and 1-38. In the following formula, for example, Framework II returns an answer of 3022 instead of the correct answer of 1447.

```
2 * -4^3 + 500 * (@sum(1,2) + 15%)
```

This formula is taken from page 1-38 in *Framework II Advanced Topics.* In this example, the minus sign is recognized as meaning minus 4 rather than subtraction. @sum(1,2) is evaluated to 3. The 15% is evaluated to 0.15 and added to @sum(1,2), yielding 3.15. The -4 is multiplied by itself three times, yielding -64. At this point the formula looks like

```
2 * -64 + 500 * 3.15
```

Next, 500 is multiplied by 3.15 yielding 1575. Then, instead of multiplying -64 by 2, the -64 is added to 1575 before the multiplication is done. This returns 3022, which is incorrect.

The work-around is to place the unary operator and its value inside parentheses. For example,

```
2 * (-4)^3 + 500 * (@sum(1,2) + 15%)
```

This happens in both versions of Framework II.

Templates

When a Telecomm frame is printed using a **Template** from the **Print** pull-down menu, the template frame's **Print:Format Options:Page Offset** and **Width of Line** are ignored. The remaining **Print** menu options, however, are recognized. This is true of any frame created by a telecommunications session.

The work-around is to manually set **Print:Format Options:Page Offset** and **Width of Line** if you are going to use the Telecomm frame. A better solution is to copy the contents of the Telecomm frame to a completely new frame avoiding the assignment of local attributes to your frame of downloaded text.

This problem occurs in both versions 1.0 and 1.1 of Framework II.

WordStar Import

Framework II incorrectly imports a WordStar file under the following conditions:

1. If a line of text ends with a soft carriage return.
2. The preceding line ends with a hard carriage return.
3. The following line has a hard carriage return as the first character.
4. The left margin of the document is 0.

After the import, the line with the soft carriage return has a left margin of 65. If the lines following it include text and a hard carriage return, they will also have a left margin setting of 65. This happens only under the circumstances described above. If the line following the soft carriage return contains text or the left margin is greater than 0, the problem does not occur.

The work-around is to select the affected lines with **EXTEND SELECT (F6)**, and reset the left margin using the **Words:Left Margin** menu option.

This happens in both versions of Framework II.

dBASE Administrator

APPEND/APPEND FROM

In a networking environment, index file corruption occurs when more than one workstation APPENDs to the same indexed database file using either the APPEND or APPEND FROM command. The following code demonstrates three techniques to prevent the corruption of index files during an interactive APPEND.

```
* ---Wait for lock on Master.
SELECT 1
DO WHILE .NOT. FLOCK()
    @ 1,70 SAY "FLOCK"
ENDDO
@ 1, 70
SET INDEX TO Key
APPEND BLANK
* ---Edit routine.
UNLOCK
```

1. FLOCK() is used to lock the file while records are appended.
2. SET INDEX TO <index file> insures the use of an accurate index file.
3. UNLOCK removes the lock on the database so that the index keys are reordered in the index file.

This occurs in both versions of the dBASE Administrator.

README.1ST

The README.1ST file on the LAN PACK disk erroneously refers to ADDUSER.COM as ADDUSER.EXE.

This only occurs in version 1.1 of the dBASE Administrator.

dBASE III PLUS

APPEND FROM

If you have a file with an eight-character filename and no extension, you cannot APPEND FROM it into dBASE III PLUS. Attempting to do so returns the error message "File does not exist." Including two periods (..) after the filename produces the same result.

To work around the problem, add an extension to the filename or shorten it using two periods to indicate that the file has no extension.

This problem occurs in both versions 1.0 and 1.1 of dBASE III PLUS.

ASSIST

With SET CATALOG OFF, all files created from ASSIST are given dBASE III PLUS default extensions, regardless of the extension entered when prompted for the filename. However, with SET CATALOG ON and a catalog file open, user-defined extensions are properly retained.

This problem occurs in both versions 1.0 and 1.1 of dBASE III PLUS.

CHR()

dBASE III PLUS print commands do not pass CHR(26) (1AH) to the print device. Interestingly, this is the character used as the end-of-file mark. You can, however, output it to the screen or disk file properly. For example, the command

```
?? CHR(27) + "C" + CHR(26)
```

should set the form length to 26 lines on an Epson printer. However, since the form length argument is not sent, the value of the next character becomes the form length argument instead. Typically, this is a carriage return or line feed character, which means that your new form length will be 13 or 10 lines respectively.

You may be able to work around this problem if your printer has an option to turn off the eighth or high order bit (which the Epson does). Once you have set the high order bit off and you want to send CHR(26) to the printer, send instead CHR(128 + 26) or CHR(154). Since the higher order bit is ignored, the printer now interprets CHR(154) as CHR(26). For example,

```
SET PRINT ON
* ---Turn off high order bit on an Epson.
?? CHR(27) + "="
*
* ---Set form length to 26 as before.
?? CHR(27) + "C" + CHR(128 + 26)
*
* ---Set on high order bit.
?? CHR(27) + "#"
SET PRINT OFF
```

This does not necessarily work on all printers, but is worth a try if you are experiencing the problem. For more information, see "Sending CHR(0) to the Printer" on Page 17 of the September 1985 issue of ***TechNotes***.

This problem did not occur in dBASE III and the Developer's Release, but occurs in both version 1.0 and 1.1 of dBASE III PLUS.

RANGE

The RANGE option of GET can return an incorrect result when calculated numeric expressions are used as bounding values. When you enter values that match the calculated bounding value, dBASE III PLUS erroneously returns the error message "RANGE is <low> to <high> (press SPACE)." For example, when the routine

```
mem1 = 0.00
mem2 = 0.80
@ 10,20 GET mem1;
        PICTURE "99.99";
        RANGE 0.0, 1.00 - mem2
READ
```

is executed, entering 0.20 produces the error message even though it is a valid entry. This is due to problems with dBASE III PLUS numeric accuracy (see ***TechNotes***, March 1985, page D3-10.) To work around this problem, use the VAL(STR()) combination explained in the March 1985 issue. For example,

```
@ 10,20 GET mem1;
        PICTURE "99.99";
        RANGE 0.0, VAL(STR(1.00 - mem2, 5, 2))
```

This anomaly occurs in both version 1.0 and 1.1 of dBASE III PLUS.

READ

When READ activates an @...GET...PICTURE of a numeric field or memory variable with a literal character in the first position of the PICTURE template, the field value is set to 0 if **Return** is pressed without changing the data. Including function "@R" to ignore literals has no effect. For example,

```
REPLACE <numeric field> WITH 1234
@ <row>, <col> GET <numeric field> PICTURE "@R (####"
READ
```

This occurs in versions 1.0 and 1.1 of dBASE III PLUS.

SET FILTER TO

When you SET FILTER in a program and the filter condition contains variables that were initialized as PRIVATE within the same program, errors may later occur when display commands are executed at the dot prompt. When the condition is a simple expression, the filter is ignored. However, when the condition is complex (containing .AND., .NOT., or .OR.), display commands produce the error message "Internal error: EVAL work area overflow." DISPLAY STATUS reveals that the SET FILTER condition is in effect but the variables appear as literals.

To work around this problem, use PUBLIC memory variables for the arguments of SET FILTER or release the filter before you leave the local procedure.

This occurs in both version 1.0 and version 1.1 of dBASE III PLUS.

SET FUNCTION TO

When you reassign a function key with SET FUNCTION TO, the original definition is greater than 3, and the new function key value is longer than the original, corruption occurs in areas of dBASE III PLUS memory used for user-definable values. As a consequence of this corruption, garbage characters may appear in user input areas for commands such as ACCEPT and INPUT. For example,

```
* ---Test.PRG
SET FUNCTION 2 TO "Four;"
*
* ---Press F2.
ACCEPT "Press F2 " TO mem1
*
* ---Reassign the key to a string longer than before.
SET FUNCTION 2 TO "MainXXXX"
ACCEPT "Enter anything here-> " TO mem2
```

In this example, the second ACCEPT displays its prompt with "XXX" concatenated to the display and pressing **Return** assigns "XXX" to mem2.

This anomaly occurred in version 1.0, but is corrected in version 1.1 of dBASE III PLUS.

TOTAL

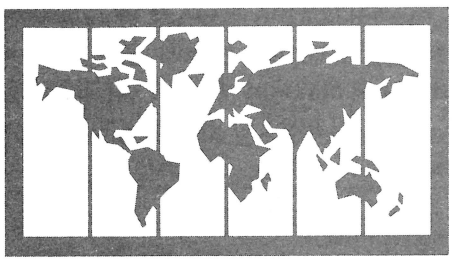
When any numeric field in a database file contains a numeric overflow, performing a TOTAL on that database file produces "Numeric overflow (Data was lost)," even if the field with the overflow is not TOTALed.

You can work around this by removing the numeric overflow characters from your numeric fields using the following command line and then running the TOTAL command.

REPLACE ALL <numeric field> WITH 0 FOR STR(<numeric field>) = "*"

This occurs in versions 1.0 and 1.1 of dBASE III PLUS.

INTERNATIONAL



Using Framework II Minitel Emulation to Access LCE's On-line Services

BY ALISTAIR CONNOR, LA COMMANDE ELECTRONIQUE, FRANCE

Last month we discussed how to use Framework II to emulate Minitel terminals. Minitel terminals allow you to access any of Teletel's electronic services, such as electronic bulletin boards, on-line telephone directory listings, and electronic mail. La Commande Electronique (LCE), Ashton-Tate's distributor in France, provides information through the Teletel systems. You can logon to LCE's server and get the latest information on Ashton-Tate products, pose questions to the LCE Technical Support Team, or read usage tips regarding dBASE, Framework, and MultiMate products. Here we will discuss the structure and services of the LCE server and how to logon to them.

You can logon to the Teletel system with four different telephone numbers, depending on what service you want. Below is a list of telephone numbers and a brief description of the services:

Telephone Number	Teletel Service
11	This number logs you onto the on-line telephone directory for all of France.
3613	This is the Teletel 1 service. Most of the services available via Teletel 1 are subscriber-only. This means that you pay a subscription fee and are assigned a password to log onto the service. A typical service is a specialized professional information service, such as weather forecasts, truck spare parts catalogs and order forms. Apart from the subscription fee, you are charged for a local-rate phone call during the connect time.
3614	This is the Teletel 2 service, which is where LCE's server is. Using Minitel 2 costs about .74 franc per 120 seconds. Half of this money goes to the provider of the service and the other half goes to the phone network. The purpose of Teletel 2 is to provide a service to a specific population (such as dBASE and Framework users).
3615	This is the Teletel 3 service. This service offers many different new papers (such as *Le Monde*) and magazines to read, games to play, dating services, horoscopes, and used car catalogs, to name a few. Using these services costs about .74 franc per 45 seconds.

As we discussed last month, with the aid of an LCE 22-23 modem board and terminal emulation driver, you can use Framework II as a Minitel terminal, allowing you to access any of Teletel's electronic services through Framework II telecommunications. For instructions on how to do this, refer to "Using Framework II to Emulate Minitel Systems" in the March 1987 issue of ***TechNotes***.

Whether you are using an actual Minitel terminal or Framework II, you can logon to LCE's server. Here's a brief summary of the keys you need to use with any of Teletel's services:

Key on Minitel Terminal	Equivalent Key on PC Keyboard	Description
GUIDE	**F1**	"Help": Offers help in using the Teletel systems. It is not used by the LCE server.
SOMMAIRE	**F2**	"Summary": backs up to the previous menu.
CORRECTION	**F3**	"Delete": used to correct typing errors.
ANNULATION	**F4**	"Log off": used to exit the server and return to the Teletel 1, 2, 3 welcome screen.
RETOUR	**F5**	"Previous": backs up to the previous screen.
REPETITION	**F6**	"Repetion": not used by LCE server.
SUITE	**F7**	"Next": displays the next screen time of a multipaged document.
ENVOI	**F8**	"Send": used to transmit your entries to the Minitel server. It is generally used to validate a choice.
Changement de Palette Colors	**F9**	"Change": used to change colors on the screen.
Connexion/Fin	**F10**	"Log off": used to log off the Teletel service and disconnect the modem.
CONNEX/FIN	**F10**	"Disconnect": used to hang up the phone.

For more information regarding these keys and their functions, refer to the LCE 22-23 modem manual.

Logging Onto LCE's Server

Logging onto LCE's server through Framework II Telecommunications requires installing the LCE 22-23 modem card, modem driver, and parameter file as described in last month's article, "Using Framework II to Emulate Minitel Systems." Assuming you are in Framework II and the Minitel parameter file (Minitel.TE) is loaded, follow these steps:

1. Enter 3614 for the telephone number (No à Composer) in the **Apps:Télécommunications:Paramétrer: Options de Configuration** submenu.
2. Verify that the parameter settings are correct. The correct parameter settings for logging onto the Teletel system are shown below in Figure 1:

Format		Modem		Configuration	
Vitesse	75	Itérations d'Appel	{0}	Rôle	APPEL
Données	7	Séq. d'Init.	{}	Séq. d'Accès	{}
Parité	PAIRE	En-tête d'Appel	{ATE0QQPDL1}	Prise Ctrl à Dist.	{}
Bits de Stop	1	Liaison Directe	---	Emettre Car. Ctrl.	---
		Port Série Numéro	2	Duplex	FULL
TWX	---	N° à Composer	{3614}		
ASCII 7-Bits	---				

3. Select **Apps:Télécommunications:Paramétrer:Commencer/Continuer Procédure** to begin the session.

   When the Minitel emulation begins, the screen goes blank for about 30 seconds. Once a connection is made, the screen shown in Figure 2 displays.

```
norme                                  0,74F
CEPT 2          télétel 2              toutes
                                       les 120 sec°
-------------------------------------------------------------
              °tarif réduit aux mêmes heures
               que le téléphone
              -------------------------------------------
              télétel 1 : 36 13
              -------------------------------------------
              télétel 3 : 36 15
              -------------------------------------------
              annuaire des services,
              tapez:AST
-------------------------------------------------------------
code
du service:SPI.........................
données complémentaires:------▮.........
-------------------------------------------------------------
                                  puis →  ENVO
                                   fin →  CX/FIN
```

4. In the field "Code du Service" enter,

   SPI

   and then press **F7** (the SUITE key) to display the next screen.

5. In the field "donnes complementaires" enter,

   LCETEL

   and press **F8** (ENVOI) to send this command to the server. As you enter the command, it does not echo the letters to the screen, but instead shows dashes for each letter entered. The LCE welcome screen displays, as shown in Figure 3.

```
La Commande Electronique

                M E N U
                -------

A   - TARIFS
B   - INFORMATIONS COMMERCIALES
C   - TRUCS ET ASTUCES
D   - BOITE AUX LETTRES (Questions)
E   - BOITE AUX LETTRES (Reponses)
F   - CDES REVENDEURS SUR CATALOGUE
CR  - CDES REVENDEURS DIRECTES

U   - AIDE A L'USAGE DU SYSTEME

        votre  choix     + ENVOI
                         CHOIX : C.......
```

Like most of Teletel's services, LCE's service follows a basic menu structure; from the menu options, you enter the letter of your choice and then press **F8**. This initial menu offers the following choices:

A) Check out prices of all the items in LCE's catalog.

B) Get the latest news on upcoming or improved products.

C) Check out the latest programming and usage tips for Ashton-Tate's products.

D) Post a question to the LCE Technical Support Team.

E) Read the response to a question you previously asked.

F) Place orders for any of LCE's products, assuming you are one of LCE's dealers. To assure that only bona-fide dealers place orders, this option requires a password.

CR) Direct reseller codes.

U) Get help on using the server.

This system is entirely menu-driven with messages and prompts to lead you through. As option U indicates, you can also get on-line help.

Usage

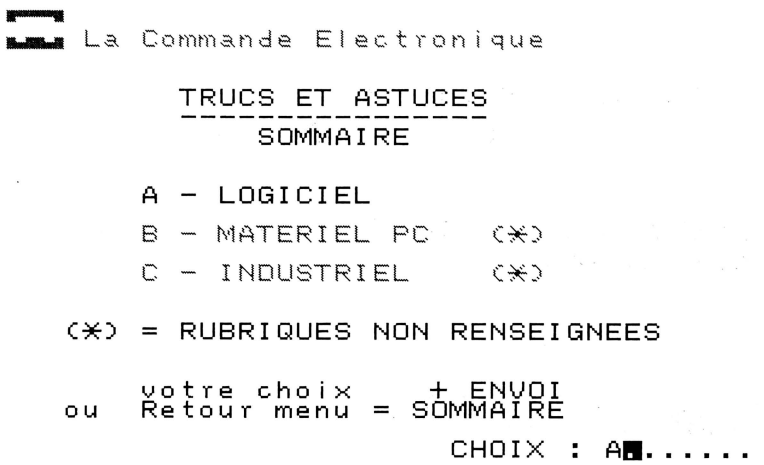
One of the more popular sections of LCE's services is Tips and Techniques (Trucs et Astuces), Questions (Boite Aux Lettres), and Responses ((Boite Aux Lettres). These sections offer a way to learn more about Ashton-Tate products and interact with LCE's Technical Support Team.

Tips and Techniques

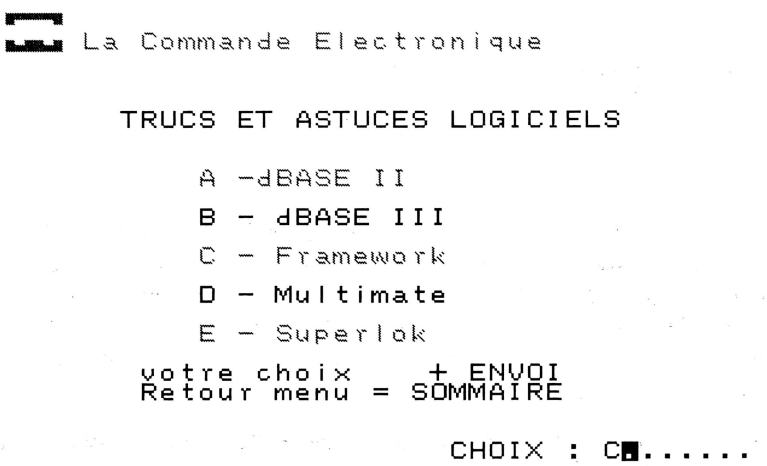
Here you can get listings of FRED and dBASE programs, solutions to problems, anomaly reports, and programming techniques. To get to this section, follow these steps:

1. Select C from the main menu (Trucs et Astuces) and then press **F8**.

   The menu that displays is shown below:



2. From this menu, select A (Logiciel) and then press **F8**. This display the following:



From here you can move through the five product sections and capture to disk any information you want.

Questions and Responses

If you want to pose a question to the LCE Technical Support Team, select D, Boite Aux Lettres (Questions) from the main menu.

```
La Commande Electronique

BOITE AUX LETTRES QUESTION
--------------------------

  A - BOITE AUX LETTRES
      REVENDEUR
  B - BOITE AUX LETTRES
      CLIENT FINAL


 Votre choix      + ENVOI
 Retour menu =   Sommaire
                  CHOIX : B.....
```

From this menu, select A if you are a dealer; otherwise, select B. Assuming you select B, the screen looks like this:

```
La Commande Electronique

BOITE AUX LETTRES CLIENT FINAL
   LA QUESTION CONCERNE


CA - UN LOGICIEL
CB - UN MATERIEL PC
CC - UN PRODUIT INDUSTRIEL


     Votre  choix    + ENVOI
     Retour menu =  Sommaire
                     CHOIX : CA.....
```

From here, select the category: Un Logiciel, Un Materiel PC, or Un Produit Industriel (Programs, PC Add-on Cards, or Industrial Products). To pose a question, first enter the product serial number, product name, and your name and address. Then press **F8** to validate the page, and enter C to continue. Enter your message and press **F8** to send it. The LCE Technical Support Team will answer your question within 48 hours.

Whenever you pose a question, you are assigned a reference number that you will use later to get the answer. The number references the question to the answer.

To exit, either press **F3** to drop back to the Teletel 2 main menu where you can then logon to another Teletel 2 service, or press **F10** to exit the service and disconnect the modem.

Saving Data to a Text File

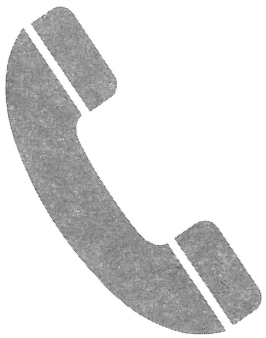
By using Framework II to emulate a Minitel terminal, you can save data to a text file as it displays to the screen. This is especially useful for capturing program code and long usage tips.

To capture information in a text file, enter a filename for the **Apps:Télécommunications:Texte:Fichier de Mémorisation** option and toggle the **Apps:Télécommunications:Texte:Memoriser dans Fichier** option to OUI. From that point on, as data is displayed to the screen, it is also written to the specified text file. When you want to stop saving information to the text file, deselect **Apps:Télécommunications:Texte: Memoriser dans Fichier**.

Once your data is captured to a text file you can use the EXTRACT utility program that comes with the LCE 22/23 modem card to filter out control characters from the text file. You can execute it from DOS or from DOS Access. To do this, enter

EXTRACT < text filename > **Return**

Perhaps the key to the success of the Minitel terminal and the Teletel system is that it provides a centralized, standardized means of accessing different information services. The LCE server offers you a way to learn more about the product(s) you are using, and with Minitel emulation on Framework II, a way to save that information to disk.



ON-LINE SERVICES

BY STEVE SILVERWOOD

Do you have a modem? Do you subscribe to CompuServe or The Source? If so, Ashton-Tate offers technical support on all of these electronic information services. You can quickly access the kind of quality technical information that you have come to expect from ***TechNotes***, and you can do it through your computer system. To take advantage of this progressive new support method, you must subscribe to one of the services listed below. There are no additional charges for using our on-line support services, apart from the normal connect-time fees for each service. You can get specific subscription information by calling one of the following numbers:

Service	Subscriber Information	Command to find Ashton-Tate
CompuServe	(800) 848-8199	GO ASHTON
The Source	(800) 336-3366	ATSIG

To give you an idea of support that is happening on-line, ***TechNotes*** will be publishing regular excerpts from the Ashton-Tate Forum on CompuServe. This monthly material comes from messages our Forum users have posted on the bulletin board. All message headers have been removed to protect the identities of our users. Replies (within a single conversation topic) have been italicized below to enhance readability.

---

dBASE II, dBASE III, and dBASE III PLUS

I am having a problem with the dBASE Administrator on a 3COM 3+ version 1.1 network. DISPLAY STATUS does not show the locks, and DISPLAY USERS does not show any users. Anyone else having this problem? Is it the dBASE Administrator, 3COM 3+, or me? Does anyone running Novell have this problem? Thanks!

It sounds as if you either are running with the wrong version of DOS (you must have 3.1 or higher) or you do not have the dBASE Administrator installed. From DOS, type VER to find the DOS version. From dBASE III PLUS, type ? VERSION() to make sure the Administrator is installed.

.....

I would like to know if it is possible to run dBASE III PLUS under Concurrent DOS 5.0? I am interested in accessing ASCII files written by a program that I am considering purchasing to be APPENDed FROM SDF to a dBASE III PLUS database file. But this program runs only under Concurrent DOS 5.0. If I can't run dBASE III PLUS under this operating system, can I run it under MS-DOS and still access the file? Any and all help will be much appreciated.

If the file is a standard ASCII text file that can be APPENDed using the SDF option, then you can access the file from dBASE III PLUS while running under PC/MS-DOS. As for running the program under Concurrent DOS 5.0, we have not certified the dBASE III PLUS in that environment, nor do we have a copy of Concurrent DOS available for testing. Sorry.

.....

We are trying to convert a dBASE II index file to dBASE III. As of yet we haven't been too successful. We are using the DCONVERT utility.

The DCONVERT program creates a program file with a .RX extension. This file contains a single command to rebuild the index file within dBASE III PLUS. To use these files, type USE <your database file>, then DO <index file name>.RX to rebuild the index file. Once this is done for each database and index file, you can delete the .RX files. That's all there is to it.

.....

Does anybody know how to capture the name of the program one is in without passing it in from the called from module? Is there a function-passing or parameter-passing type of approach available?

While this is available in other products, there doesn't appear to be any way to do this in dBASE III PLUS without using a memory variable to hold this information. The simplest method is to create a system global variable and update it every time you begin a new procedure or command file. This way you do not need to pass it as a parameter and you can place the assignment statement as a part of your standard procedure or command file header.

.....

I am currently running an application that requires two index files for each database file. The first index file consists of only one numeric field and has caused no problem. The second index file consists of a key field of two numeric fields. This index file is not functioning properly. The records appear in no apparent order. Any workarounds or feedback on this problem would be greatly appreciated.

I imagine the problem is that you're INDEXing ON Field1 + Field2. This looks ok, but since it results in the sum of the two numeric fields, order is not preserved. To properly create an index key from two or more numeric fields, you must convert each numeric field to character using STR() and then concatenate them together to form the key value. For example,

INDEX ON STR(Field1, <length>) + STR(Field2, <length>) TO YourNdx

Be sure whenever you use STR() in an index key expression that you include the length of the numeric field as the length argument of STR(). Failure to do so may result in an invalid index file.

.....

I have been trying to work with the cursor pad keys with the INKEY() function. I have found the **Leftarrow** (keycode 19) to be flaky. The key serves also as a **Ctrl-S**. The dBASE III PLUS 1.1 Manual doesn't mention it, but the 1.0 Manual notes that the system may interpret the key as **Ctrl-S** and pause the system. The suggested fix is to use SET ESCAPE OFF. So far, no matter what combination of SET ESCAPE ON/OFF commands I use, I can't get the INKEY() to trap **Leftarrow** to function properly. I worked around by using **Ctrl-LeftArrow** instead, but that is somewhat kludgey. Any ideas about what might fix the problem?

*The lack of response to the **Leftarrow** is indeed a serious problem with version 1.1 of dBASE III PLUS. With version 1.0, SET ESCAPE did the trick, but with version 1.1 nothing seems to make any difference. I just wrote a routine in assembly language to replace INKEY(). It actually is a very short routine, and does little more than check to see if a key was pressed. If one was, it converts the scan code to the value dBASE III PLUS is expecting. The only major difference is in the use of the function keys, since dBASE III PLUS returns negative values, and my routine can't. (Ed.— See Replacing INKEY() with INKEY.BIN in this issue.)*

.....

I'm having no success in using memo fields with the @...SAY and @...GET commands. The documentation suggests that you should be able to treat these fields like any other, but it just isn't working. Any help?

*You can @...GET memo fields in combination with all full-screen commands except READ and BROWSE. For formatted screens, use a format file. In those instances where you want to EDIT the current record, use CHANGE or EDIT NEXT 1 and your format screen will appear. When you place the cursor on a memo field, press **Ctrl-Pgdn** to EDIT the memo. @..SAY, however, does not work with memo fields. You must instead use ?, ??, LIST, DISPLAY, or REPORT FORM depending on your needs.*

To control some of the formatting of your memo data, you can use the SET MARGIN to adjust the left (starting) position of the data and the SET MEMOWIDTH command to adjust the right (ending) position.

To use memo fields in REPORT FORMs, specify the name of the memo field in the column contents. Memo fields longer than the specified report field length are wrapped the same as character data type fields.

Hope that helps.

.....

Is there a nice easy way to determine the status of **NumLock** under DOS and then set it on from dBASE III PLUS? Also, is there any way to poke values into memory locations?

*There was a program written to force the **NumLock** ON and OFF in **TechNotes**, September 1985, page 13. You can also download this article from the data library here if you prefer.*

If you were or are still working with dBASE II you probably remember that dBASE II had a PEEK() function and a POKE command. Unfortunately for dBASE II users wedded to this feature, it is not in dBASE III PLUS. To peek and poke values in memory, you will have to create LOAD and CALL modules for each function to work with dBASE III PLUS.

.....

I have two questions. First, does dBASE III PLUS work with Tiara Computer Systems TiaraLink LanWare? And second, if we have a five-computer LAN set up, do we need to buy five dBASE III PLUS software packages, or do we only need to buy one for use on a LAN?

At this time, that specific LAN has not been certified. If, however, it is NETBIOS compatible with IBM's PC-NET, the dBASE Administrator may work. To obtain more information, you may want to contact the LAN manufacturer and see if they have tested it. Many LAN manufacturers go out of their way to test widely used software on their LANs in order to increase their list of compatible software.

In terms of the LAN packs, if the LAN does work, then all you'll need is one copy of dBASE III PLUS version 1.1 (installed as the dBASE Administrator) and one LAN pack (which includes software to add five users).

.....

Is there or will there be a version of dBASE III PLUS for the DEC Rainbow 100?

There is a version of dBASE III (not III PLUS) for the DEC Rainbow marketed and supported by Digital Equipment Corporation. For information on availability and price, call (800)DEC-8000.

Framework II

I have a customer (I am in software retail) who needs to import a text file with the fields separated by commas, strings delimited by quotations, records delimited with a carriage return into Framework II. Oddly, Framework can Export to a delimited file, but can't Import it. Someone please, I need help! If this already exists somewhere, let me know quickly! Thanks much.

If you want to import a delimited text file, you have no problem. All you have to do is load the file to the desktop as you would any Framework II frame. When you load such a file into Framework II, it comes into a word frame (as do all text files). Then you just ***COPY (F8)*** *the text into a spreadsheet or database frame. The delimiters are properly handled by Framework II.*

Thanks very much! The solution seems so simple that I'll have to try it to believe it. I kick myself for not trying it before.

.....

Does anyone know whether (or how) to make Framework II work with a mouse? I have a Microsoft Version 6.0 mouse and a Mouse Systems mouse and neither seem to have any effect upon Framework II, although I have a friend who swears that his mouse does work with Framework II. Any experience out there?

Take a look at FWMS2.ARC in DL3. In this file, you will find a Microsoft mouse program and some instructions written specifically for use with Framework II.

.....

Is there a workaround for the @t Telecommunications command to allow Framework II to trap more than one character at a time? I want to trap a word since there is no unique character that my application will be receiving. Just a unique word. Any ideas?

Read the article TRAP.ART in DL3; it contains an article in the December 1986 issue of ***TechNotes*** *on this subject. It presents a sample macro to trap on a word. Additionally, it also waits indefinitely, whereas @t times out.*

.....

MultiMate

What does the MultiMate Advantage LAN package give me on the network, as opposed to the regular package?

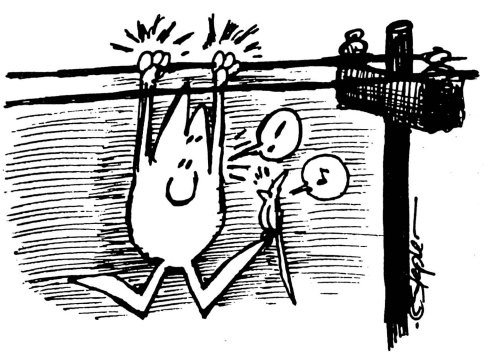
There are two differences between the MultiMate Advantage LAN version and the MultiMate single-user version. First, the MultiMate LAN version looks for files in different places on the network so that you can use one copy of the MultiMate software for all users on the network. Second, the MultiMate LAN version allows you to print to a network printer in addition to local printers. Each version is tailored specifically for the environment it will run in, and will run only in that environment.

.....

I'm having some difficulty installing MultiMate Advantage on a coworker's PC. It's a 3270 PC that is currently running MultiMate 3.30 without any difficulty. However, I'm having a problem installing the new version (in a separate directory). I ran the "ID" program without any problem and copied all of the diskettes into a hard disk subdirectory. When I call up the MultiMate Advantage Boot-up Menu ("MM"), select the word processor, and ask for number 7 "Other Utilities," I receive an error message at the bottom that says, "Invalid Selection." It then beeps every few seconds in an endless loop. When I select the Printer Control Utilities, the screen begins to flash different colors and only pressing **Ctrl-Alt-Del** stops the flashing. Any hints on how to solve this problem would be very much appreciated!

Try turning off the "Accelerated Keyboard" feature in the "Util" program. To get into the Advanced Utilities program, type "Util," press ***Space*** *until "Modify Console Defaults" is highlighted, then press* ***F10****. Now use the arrow keys to get to the "Accelerated Keyboard" field and press* ***Space*** *so that this field reads "N". This may clear up the situation you described on the 3270 PC with version 3.60.*

Thanks for your help. That solved the problem.



ANNOUNCEMENTS

Cancellation of Authorized Training Center Program

The Authorized Training Center Program has been cancelled. Call 213/538-7366 for information.

Certified Learning Center Program

A new program has been developed called the Certified Learning Center Program. For information, call, 213/538-7361.

New Books from the Ashton-Tate Publishing Group

MultiMate: Tips and Techniques ($19.95, ISBN: 0-912677-88-0), by Dick Andersen and Janet McBeen, is a comprehensive reference tool for MultiMate Advantage 3.6. Beginning, intermediate, and advanced users can all benefit from this comprehensive reference tool. Tips include step-by-step instructions on using MultiMate commands, formatting documents, printing, merge printing, and create and using key procedures.

dBASE Programmer's Utilities ($89.95), by Robert A. Byers, Jeb Long, C. Wayne Ratliff, is a collection of dBASE and DOS utilities. It has the features you need to repair and recover damaged dBASE database files; create more attractive dBASE screen and interface designs; structure and cross reference command files; speed up error-checking and debugging of program code; and control your communications port from within dBASE. It also includes disk and directory management utilities. For use with dBASE III PLUS and dBASE III: The Developer's Release. Requires an IBM PC, XT, AT; 384K RAM, PC-DOS/MS-DOS 2.0 or greater.

dBASE Tools: The Pascal Programmer's Library (89.95), from J.T. Cooper & Company, is a dBASE III PLUS language interface and Pascal library that gives you the power to call and execute compiled Pascal functions and programming routines as part of normal dBASE program operations. You can calculate complex business and financial functions, including present or future value, net present value, amortization, internal rate of return and more. This tool also adds the power of arrays to dBASE. Statistical and mathematical functions are also included: random numbers, set functions (minimum, maximum, mean, median, range), frequency distribution, trigonometric functions, and many more.

The supplied library of Pascal functions can be expanded by directly incorporating your customized Pascal functions into dBASE. In order to use the supplied library, you *do not* have to know the Pascal programming language. For use with dBASE III PLUS or dBASE III: The Developer's Release and Turbo Pascal version 3.0 from Borland International. Requires an IBM PC, PC/XT, PC/AT; two floppy disk drives, or one floppy and one hard disk; 384K RAM.

RapidFile Business Applications (19.95, ISBN: 1-55519-000-6), by Leo Brodie, is an introduction to using RapidFile, the newest member of Ashton-Tate's family of software, in typical business applications. Specific applications are grouped into generic categories that include gathering and organizing information, cataloging, people files, archives and document retrieval, calculated data, forms and labels, mail merging, and reports. In each category typical applications are fully explained and you can use whatever application applies or modify it to suit your particular business needs.

Designed so that the simplest concepts are explained at the beginning and the more advanced topics discussed towards the end, both beginning and advanced RapidFile users will benefit from this comprehensive guide.

dBASE III PLUS for Every Business ($19.95, ISBN: 0-912677-86-4), by Robert A. Byers, is a major revision of *dBASE III for Every Business*. Intended for users familiar with dBASE III PLUS or having programming experience, Byers takes a creative approach to dBASE programming. The book follows the creation of an menu-driven application for a typical small business.

To Order: Call toll free (800)437-4329. In Colorado, call (303)799-4900. Or call these numbers for the name and location of your local bookseller or dealer.

LETTERS

Dear *TechNotes*:

I have written a program in dBASE III PLUS to print a report because the REPORT FORM command does not give me the type of output I need. However, when reaching a certain point within the report, the printer starts feeding blank sheets of paper, and the program locks up. It always does this at the same point in the report.

DH

Dear DH:

The likely problem with your report output is that your "line" variable is exceeding a value of 254. dBASE III PLUS cannot accommodate a line value in an @...SAY statement of greater than 254 and will behave strangely if given such a command. This is a limitation that has been documented for all versions of dBASE III, and dBASE II.

To compensate for this, within the portion of the program where your "line" variable is incremented, test to see if the incremented value exceeds the maximum number of lines that you can print on a particular page. If it does, reset the value of line back to 1. When dBASE III PLUS encounters a line value in an @...SAY command lower than last line printed, it sends a form feed character to the printer. At this point, the output continues to print from the top of the new page form until the line counter again reaches its predefined maximum value or until the program runs out of data to print.

Dear *TechNotes*:

I have a question concerning reprogramming function keys in dBASE III PLUS. I would like to access the DOS function key **F3** capability (retyping what's most recently been typed to the keyboard) while I am working with dBASE III PLUS. This would be most helpful when you have a long command string that you've typed in at the dot prompt and misspelled one word. Is it possible to reprogram a function key to recognize this DOS **F3** function?

SJ

Dear SJ:

You don't really have to reprogram **F3** to access the last command line executed. dBASE III PLUS has a feature called HISTORY which stores each command line you execute up to the limit you specify or a default of 20. After you execute a command, you can access it again by pressing **Uparrow** and scroll through previous command lines with both **Uparrow** and **Dnarrow**. Pressing **Return** executes whatever command line is at the dot prompt.

The commands that affect the HISTORY mode in dBASE are SET HISTORY ON/OFF and SET HISTORY TO <number>, where <number> is the maximum number of commands that will be retained in the HISTORY buffer.

For more information, see the "Using Commands" section of the *Using dBASE III PLUS* reference manual.

Dear ***TechNotes***:

I have a problem with a FRED program I am writing. The program is for a system that will be placed in the field and so it must be bullet proof. One of the problems I need to solve is how to trap **Ctrl-Break** so the user cannot break out of the program inappropriately. Can you give me any help with this?

R.J.

Dear R.J.:

Yes, you can trap **Ctrl-Break** by using a keyfilter. The syntax to trap **Ctrl-Break** with a keyfilter is, **@keyfilter**({Ctrl-Break}, frame), where "frame" is the name of a frame that contains the formula you want to execute when **Ctrl-Break** is pressed. If you just want to mask the key, leave the keyfilter filter frame blank or place an **@beep** in the formula area to indicate an illegal keypress.

Dear ***TechNotes***:

I have two questions:

1. When configuring Framework II, can I configure the **Print:Destination:Plotter**, as a third printer instead of a plotter? The reason I ask this is that I do not have a plotter, but do use the equivalent of three printers (a LaserJet in both portrait and landscape mode and a dot matrix).

   I recall attempting to set up the plotter with a printer driver when I first received Framework II version 1.1, but Setup returned an error message indicating the driver was an incompatible version. I tried it again several times, making sure I was using version 1.1 disks, but each time the same message appeared. I finally gave up and haven't tried since. It would be quite nice, however, if three printers could be installed in this fashion.

2. I am running Framework II on an AT clone that has a Hercules monochrome graphics card with a monochrome monitor installed. I am using the Hercules screen saver software to blank the screen after so many minutes of inactivity. When Framework II is configured with the Hercules monochrome graphics screen driver, bringing the screen back up after it blanks out usually results in only the top 25% or so of the screen reappearing. This does not happen when the screen driver is the IBM monochrome text driver, but does happen when using Microsoft Word (which also uses a graphics screen).

   Is there a way to force Framework II to repaint the entire screen? There is such a command in Word **(Ctrl-Alt-\)**, but nothing I've tried so far works in Framework II except quitting and restarting the program. I had hoped that displaying a graph in the **ZOOM (F9)** would do the trick, but no luck. Do you have any other suggestions?

M.B.

Dear M.B.:

Unfortunately, you cannot configure the plotter as a printer. The drivers and the hooks for them in Framework II are quite different from printers.

As to your second question, the screen saver problem is typical when using a graphics screen driver. The screen is blanked by the saver program, and Framework II isn't aware of it. An easy workaround is to do a DOS Access, then CLS in DOS, then EXIT back to Framework II.

Dear ***TechNotes***:

I do extensive inventory control work for a video store using Friday! on a CP/M machine. I am now upgrading to a PC Clone and want to upgrade to dBASE III PLUS. I have a transfer program to copy floppy disks from CP/M to MS-DOS. What I need to know is can I use Friday! data and index files in dBASE III PLUS when I finally set up on my new machine? In addition, can I go the other way; can files created in MS-DOS and dBASE III PLUS be used in Friday!?

K.S.

Dear K.S.:

Yes, you can convert database files from Friday! to dBASE III PLUS using the DCONVERT utility that comes with dBASE III PLUS. Friday! data files are actually dBASE II database files with names that Friday! uses to track them so DCONVERT will convert them. To convert, export Friday! data file to a dBASE II file using the **Other Activities:Copy** Files menu option so that each has the appropriate filename and a .DBF extension. Then run DCONVERT choosing the Database option from the main menu. You can also batch convert from dBASE II format to dBASE III PLUS format by specifying a wildcard pattern for the database files you want convert and DCONVERT will convert all database files that match the pattern and bypass the menu.

If you want unconvert dBASE III PLUS files back to dBASE II format, use option 7 on the DCONVERT main menu. Then in Friday! import these dBASE II database files with the **Other Activities:Combine Files** menu option.

Although you can DCONVERT the index files, it is much easier to completely rebuild them in dBASE III PLUS. It shouldn't take too long as dBASE III PLUS INDEXes considerably faster than Friday!.

Dear ***TechNotes***:

Is there any way to format a REPORT FORM to pass a memory variable or other macro (e.g.. dates other than the system date) in the title? I use a number of REPORT FORMs that always require doctoring in my word processor to insert this kind of stuff and it's a pain. Is there something you can tell me that would assist me?

O.L.

Dear O.L.:

There are two basic approaches to your problem. First and easiest is to use the HEADING clause of the REPORT FORM command line. The HEADING clause accepts a character expression and places the result centered on line one of the report. For example,

```
newdate = DTOC(DATE() + 30)
REPORT FORM <your report> HEADING newdate TO PRINT
```

Another approach is to create a program that prints the page header and footer information according to any format you want. Then you invoke your REPORT FORM using the PLAIN and NOEJECT options setting a scope for the number of records that you will print per page. For example,

```
* Program ...: Rpt.PRG
* Author ....:  <your name>
* Date ......:  <whenever>
*
PARAMETERS title2              && Pass the second title expression.
SET TALK OFF
SET CONSOLE OFF
SET PRINT ON
pageno   = 1
rec_page = 55
*
* ---Main print loop.
DO WHILE .NOT. EOF()
    *
    * ---Print page header.
    ?
    ? "Report Date: ", DATE()
    ?? SPACE(20), "Report Title"
    ? SPACE(43), title2
    *
    * ---Print report body.
    REPORT FORM <your report> NEXT rec_page PLAIN NOEJECT
    *
    * ---Print page footer.
    ?
    ? "Page " + LTRIM(STR(pageno))
    pageno = pageno + 1
    EJECT
    ENDDO
SET PRINT OFF
SET CONSOLE ON
SET TALK ON
* EOP Rpt.PRG
```

Then to call the program, use syntax like the following example command line:

```
DO Rpt WITH DTOC(DATE() + 30)
```

When you set up a program like this, create the program lines for the header and footer. Then decide how many records you will print per page and assign this number to the memory variable, "rec_page."

There is one caution. If the REPORT FORM you have defined has report field expressions whose results are potentially longer than the report column width, this technique will not work since you cannot predict the number of lines that will print for each record. In this case, you must use the first method.

CORRIGENDA

September 1985, page 28, Get Diskspace

In the September 1985 issue, the usage tip beginning on page 28 that describes getting disk space using CHKDSK does not compensate for the instance where CHKDSK requests user input. If this were to happen, it would appear that your computer had frozen. In order to take account of this situation, you need to have input redirection from a text file that contains the appropriate responses for possible CHKDSK queries. In all cases, you want to respond with "N", so that no action is taken. To effect this, create a text file called NO that contains the following lines:

N < Return > < Ctrl-Z > < Return >

Then, to redirect the results of CHKDSK into a text file, use the following command line:

RUN CHKDSK < NO > UTIL.TXT

Thank you to Antonio D. Wilkinson for bringing this to our attention.

September 1986, page 42, @...CLEAR TO

The workaround for @...CLEAR TO not being able to erase a single line from the screen in version 1.0 of dBASE III PLUS on page 42 of the September 1986 issue is incorrect. Replace the suggested workaround,

@ < row >, < col > SPACE(< number of column positions >)

with

@ < row >, < col > SAY SPACE(< number of column positions >)

December 1986, page 6, Creative STUFF()

The program to replace all instances of one character with another in the December 1986 issue on page 6 contains an error. To workaround, replace the entire program with the following:

```
char1 = "-"
char2 = "="
cstring = "= = = = = = = = = = = = = = = = = = = ="
DO WHILE char2 $ cstring
cstring = STUFF(cstring, AT(char2, cstring), 1, char1)
ENDDO
```

January 1987, page 26, Save and Restore Screen to Files

In the article, Save and Restore Screens to File, found in the January 1987 issue, there are several errors which make Savescr.ASM and Restscr.ASM non-operational when assembled and linked.

1. On page 29, replace the line

```
LENGTH EQU 24*80*2          ; Length in bytes of screen memory.
```

   with

```
LENGTH EQU 25*80*2          ; Length in bytes of screen memory.
```

2. On page 30, replace the line

```
MOV   DX  DX OFFSET BUFFER      ; Move offset of buffer into DX.
```

   with

```
MOV   DX, OFFSET BUFFER         ; Move offset of buffer into DX.
```

3. Unfortunately, Savescr.BIN does not close files after creating them. Consequently, running it a number of times will use up the all the available file handles and result in the error message "Too many files are open." To remedy this, on page 33, add the following three lines of code to Savescr.ASM just above the line beginning with the label OUT:

```
FINISH: MOV   BX,CS:HANDLE
        MOV   AH,CLOSE
        INT   DOS
```

   Change the line JMP OUT, directly above the label COLOR:, to read JMP FINISH.

February 1987, page 26, Another Wordwrap

In the article, Another Wordwrap, there is forrmating error in Wordwrap.ASM that causes the final assembled and linked program to fail when you attempt to CALL it. Replace the following line located on page 26 in the COPYSTR procedure:

```
MOV   BYTE PTR [DI],"       ; Get rid of final null.
```

with

```
MOV   BYTE PTR [DI],' '     ; Get rid of final null.
```

or

```
MOV   BYTE PTR [DI],32      ; Get rid of final null.
```

Cumulative Index

January 1987 through April 1987

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D3	-	**dBASE III**
DR	-	**dBASE III Developer's Release**
DP	-	**dBASE III PLUS**
DPA	-	**dBASE III PLUS ADMINISTRATOR**
DB	-	**dBASE Products**
FW	-	**Framework**
FW2	-	**Framework II**
MM	-	**Multimate**
UT	-	**Utilities**

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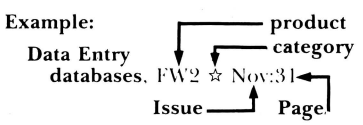

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